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Address

THE BORDERLINE OF LARYNGOLOGY, RHINOLOGY AND OTOLOGY.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON LARYNGOLOGY AND OTOLOGY, AT THE FIFTY-NINTH ANNUAL SESSION, AMERICAN MEDICAL ASSOCIATION, 1908.

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In acknowledging my obligation to the Section which has honored me, I can not do better than to bring before you certain phases of the development of our specialty. While a tremendous advance has been made in every portion of our work, the most interesting of all lies on our borderline where we meet the work of others whose investigations reach or overlap our own.

The process of limitation which has been going on in every field of human activity has had two great functions. It has permitted a far more specialized and thorough study, and it has narrowed the field by concentrating the view.

That every division of science and art has thus been subjected to a rigid scrutiny and uncompromising investigation must be admitted, and that the total effect of this research has been productive of far-reaching results can be determined by even a casual observation. But what a sacrifice there has been to the understanding of the broader side of knowledge! We have rushed pell-mell to develop our own little sphere of activity. We have dissected it and probed it and turned it inside out; but we have forgotten that outside of it there is a world, a vast world, filled with others whose aims, like ours, are directed toward the advancement of a little corner of knowledge without the slightest reference to, or perhaps interest in, the greater domain of science and human activity.

This development of specialism which received its impetus with the dawn of nineteenth-century research is evolving its own remedy. For, ever and anon, do we see evidences of a growing disposition to look over the border into the adjoining fields and to associate the great truths of one department of knowledge with those of another or of many others with a view of correlating them for the greater truth. Not only this, but the confines of the various fields are being encroached on again and again, boundaries are modified, and the whole aspect is altered even in a few years. Compared to these the boundary changes which are effected among nations through the instrumentality of wars, revolutions and the greed of man are but insignificant and unimportant.

In no department of medicine has this been more manifest than in laryngology and otology. These certainly did not begin as surgical specialties, nor were they indeed associated together. The time is within the memory almost of some of our youngest colleagues when the professor of internal medicine was the lecturer on laryngology. Even now the enforced association of the chest with the larynx in the last few decades has kept many a man so highly concerned in physical diagnosis that he has had no opportunity to enter the more logical field of associated surgical conditions. The combination of the eye with the ear, though illogical, remains still a factor largely in view of their accidental association years ago, and because the smaller size of many communities still forces such association as a means of livelihood. However much we may desire this association to continue, these specialties are surely drifting apart and soon will be free of one another.

By a process of natural evolution the ear, nose and throat have become affiliated. Thus laryngology, which was first a slight bud on the parent medical stalk, has joined with another — rhinology — and the two have grown steadily together. Long afterward, they have stolen bodily another offshoot from the parent body—otology—already well developed, and the three together have waxed in importance day by day. With the unfolding of time, who shall say what this association will bring forth, who shall say how it will change and what it will accumulate and what will be abstracted from it?

But the adjacent fields invite us, not only because we are to include some of theirs within our own possessions, but also because their very proximity renders them factors in our development. They modify our work, for as their investigators dig deep into the substratum they find veins of truth which lead them to claim a part of our own domain, or which bring them in closer touch with us.

As we look over the borderline and study our neighbor's work as it pertains to ours, we see the landmarks of the ever-changing limits of days gone by.

When the investigations and work of Garcia, Czermak, Turck and other pioneers opened up the larynx to study during life a tremendous advance was made, for the larynx came into view, though, of course, through the medium of a mirror. By this agency we have been able to cast our influence on the other fields of medical activity and to appropriate an ever-increasing portion for ourselves.

What was first simply a diagnostic aid became a means of surgical intervention, and a whole array of patients whose condition it was not possible previously to differentiate now became amenable to local treatment.

The surgical instinct was in this wise cultivated and laryngologists with greatly improved surgical technic and abundant facilities for local observation began to wander into more distinctly surgical fields. Removal of laryngeal growths, *per viam naturalem*, was soon followed by thyrotomy and more extensive operations, until now even the more radical operations like laryn-

gectomy are gradually being brought into the laryngologist's domain. The result of all this has been so to change the character of our work that we now have a specialty essentially surgical in place of the quasi-medical one which it was at its inception. How much more greatly has this been established since the path-finding work of Kirstein and Killian, and many of our own colleagues in America like Jackson, who have changed the mirror view of the larynx into a direct view, who have set the image right instead of reversed, and who have brought it within six or eight inches of our examining eye instead of twenty-four. Already the possibilities of this method have become manifest, and foreign bodies in the trachea, bronchi and esophagus have come more closely into our range of usefulness, while tumors, strictures and other conditions involving these structures are made susceptible of diagnosis and treatment. Jackson has shown how practically the whole gastric mucosa may be viewed *in situ*, and very properly maintains, at least for the present, that the work should be done by the laryngologist who is accustomed to identifying conditions in a small field.

Close to the borderline of the larynx lie the lungs, which very naturally are greatly concerned in whatever affects their port of entry. A great variety of conditions call for a correlated study of the lungs and the larynx as well as of the other organs of the upper respiratory tract.

Investigations directed toward the better understanding of tuberculosis show, in many ways, how much there is still to be learned of the relation which the laryngeal affection bears to the disease in the lungs.

The nervous system has been invaded pacifically by the laryngologist, as evidenced by a study of chorea, tabes and other nervous affections, not to speak of the value of laryngoscopic observations in pressure on the recurrent and other conditions involving the nerve supply of the laryngeal muscles. The examination of the larynx is of special value in tabes, particularly since laryngeal paralysis is one of the earliest symptoms, appearing often before others that are more classical. Bearing on this subject, Freudenthal, in his paper to be read at this meeting, takes issue with Harland and shows from examination of numerous cases that the conclusions of Semon, Kraus, Burger and others, as to the frequency of laryngeal paralysis in tabes, are justified.

Laryngeal manifestations of hysteria are too well known to require more than passing comment to show how we are developing along the borderline of neurology.

No more potent influence on the art of singing has been exerted of late years than that of laryngology. In fact, this is one of the most promising fields along our borderline. The keen interest manifested in the subject by our colleagues all over the world has been effective in cultivating a study of the vocal art along proper lines. Defects of speech, however, have not received the attention which they merit, except at the hands of a very few. When we consider how much good there is to be done in this regard and how clearly it falls within our province, it is most surprising that more interest is not taken in this subject. It is to be hoped that the persistent efforts of Gutzmann, Makuen and others will be rewarded by the more general acceptance of this line of activity as a part of our work.

The pharynx has also added to our field of work by encroachments along its borders. The investigations with respect to the function of the tonsils have opened up a great storehouse of study. The throat is thus seen to be a factor in some of the most serious affections, among the most important of which are rheumatism, tuberculosis, meningitis and endocarditis. Although final evidence is wanting, it is within the range of positive probability that many of the more general conditions have their origin in a bacterial invasion through the tonsil. The investigations of Goodale go a great distance toward the confirmation of this assumption. Quite recently Wood was able, by rubbing a virulent culture of bovine tubercle bacilli on the surface of the tonsils of hogs, to inoculate the tonsils; and he succeeded in finding the tubercle bacillus in the regional lymph glands of the neck within five days after inoculation.

The influence of adenoids on the general system and on neighboring structures is so well known that comment is almost unnecessary. It would be very strange indeed, if the warm moist character of the adenoid mass did not provide a highly satisfactory medium for bacterial growth, whereas the more physical changes result from the decided nasal obstruction which it occasions. The far-reaching effects of adenoids have added school hygiene to our borderline branches; indeed, examination for adenoids constitutes the most important part of the medical inspection of schools. In addition to these we must cite more remote conditions, such as psychoses, dementia præcox, aprosexia, etc., all of which may result from the presence of adenoids.

Cleft palate has come within our range in consequence of the fact that our province has become extended on the surgical side. It is certainly just as logical for the laryngologist to close up the floor of the nose or to obliterate a congenital cleft in the soft palate as it is for him to remove an obstruction of the nose. In the early history of laryngology operations of such magnitude were not performed by the laryngologist, but now the situation has changed in that the radical mastoid and laryngectomy call for as much understanding of surgical technic as any other surgical undertaking. The methods used for relief of serious tonsillar hemorrhage, such as suturing the two pillars and ligation of the carotid, indicate how our surgical work is assuming higher technic.

Though a late addition to our specialty, the study of the nose has given evidence of tremendous activity. Until the advent of cocain it was but a small factor. The anesthetic properties of cocain made it possible to develop the surgery of the nose along its most progressive lines. Beginning with the cauterization of the nasal mucosa, we have run the gamut of operative procedures until now we have a most highly developed surgical character of work. Witness the saw operations for ridges and spurs, the punch, cutting and crushing operations for deflections with the various retention devices as pins, solid splints, hollow splints of Mayer, block tin splints of Braden Kyle, compressed cotton of Simpson, all largely replaced by the submucous operation, which has been developed among others by Boenninghaus, Krieg, Killian, Hajek, Freer and Ballenger.

The other wall of the nose has likewise been subjected to this process of surgical evolution, as shown in the greatly improved technic now used. As suggestive of future development in this particular we need only mention the highly ingenious method devised by Yankauer for suturing the nasal mucosa, and the submucous operation on the outer wall of the nose, to be presented by Canfield at this meeting

All these are strictly within the limits of our work, but they are to be considered as evidence of study along our borderline in the field of surgery.

Sinus surgery, however, shows our encroachment on the field of surgery far more specifically, for we have appropriated the whole subject.

Radical operations on the accessory sinuses are far more frequently undertaken by the rhinologist now than the simple ones twenty-five years ago. It was culpable for him to venture into the antrum at that time and almost a crime for him to undertake a frontal sinus operation. But with our growing methods of diagnosis, impossible of performance without rhinologic technic and understanding, these operations are a part of our task and we do not shirk our responsibility.

The sinuses bring us back again to our old associate, ophthalmology, but not in the same way and for the same reasons as in the past. The more special relation which the eye bears to the sinus, not in any sense understood when they were associated, called for this study. As a more detailed investigation into this subject is being made it is remarkable how much influence we find the accessory sinuses to have on the eye. Numerous reports of blindness and other conditions have been made where the diseases of the sinus were the cause and where their cure was followed by relief from the ocular trouble. Among the many conditions coming within this range may be mentioned orbital abscess, orbital phlegmon and optic neuritis. A growing field for study and observation is thus being spread out before us and we find ourselves peacefully appropriating territory from our neighbor, who was formerly our medical sovereign.

The borderline between dentistry and laryngology has been invaded many times during the past twenty-five years. Beginning with the study of the antrum, it has extended so as to include many of the conditions with which the two branches of medicine are concerned. The maxillary sinus, which at first was considered as belonging exclusively to the domain of the dentist, or perhaps of the surgeon for the more radical work, has now been fully acknowledged as a part of our task. When alveolar puncture was practically the only remedy available besides the radical operation the dentist had full sway, but as the antrum has come to be recognized as an extension of the nose its therapeutics has been moulded accordingly. The intranasal operations are greatly to be preferred where anything short of a radical operation is possible. In addition, the more extensive operations fall naturally to the lot of the rhinologist, who from the nature of things must have these cases under investigation during the period of preliminary observation and treatment.

In malocclusion of the teeth those who practice the specialty of orthodontia have long ago recognized the almost universal etiologic influence of adenoids. Before undertaking the mechanical treatment necessary to correct the malocclusion and the irregularities in the growth of the teeth which so greatly mar the facial beauty, the almost invariable rule is to have the adenoid growths removed.

Otology has been long regarded as a specialty, first in association with the eye, then as an independent one, and later as an associate of laryngology. All the earlier writers on general diseases discussed ear affections, but little was known beyond what affected the external ear.

The first dispensary for ear diseases was founded by John Cunningham Saunders in 1805 under the name of the London Dispensary for Curing Diseases of the Eye and Ear, but later the treatment of the ear was discontinued. However, John Harrison Curtis, a student of Saunders, established an institution for the treatment of ear diseases which was more permanent. One was established in New York in 1820 for the treatment of both eye and ear diseases.

In those early times the field of otology was necessarily limited and little was understood either of the pathology or treatment of middle-ear diseases. This was mainly due to the inefficiency of examination, which was made by allowing the sunlight to fall into the external auditory canal. With the advent of reflected light the surgical side of otology underwent rapid development. However, it has only been during the past twenty-five years that anything like a proper understanding of the surgical aspects has been possible. During that time our whole knowledge of mastoid diseases and their therapeutics has been developed.

It is through the agency of the mastoid that we again step over an important borderline and invade the field of cranial surgery, to such an extent that every otologist who does even an ordinary amount of aural surgery comes sooner or later into the domain of cranial surgery. And this tendency is growing—in fact, it is becoming recognized. As indicative of this, I need only call your attention to the joint session of our own section with that of surgery for the purpose of discussing cranial surgery, the first time, I believe, that such an association has been made. This correlation of work and study is bound to be productive of good results, for there is yet much to learn of intracranial surgery as it applies to otology, rhinology and other specialties as well.

The recent work of Barany in the differentiation of labyrinthine conditions adds not a little to the influence which we have on our neighbors over the border. The diagnosis of cerebellar tumors and other processes going on in that region is thereby greatly advanced.

Otologists have long been concerned in the deaf and dumb and in the methods by which their lot is made more bearable. In recent years, however, there has been far less interest manifested, perhaps on account of the overwhelming development of aural surgery. There is still much to be done in this beneficent field of work and it can be effected only by a cooperation of otologists with teachers of the deaf and with those whose philanthropic tendencies are directed toward this great work.

I have still to mention certain surgical procedures which several years ago were considered entirely outside of our range but which are being undertaken by an ever-increasing number of laryngologists and otologists. Chief among them are plastic operations on the external nose and ear, ligation of the jugular and carotid, removal of cervical glands, goiter and hare-lip operations and neuroplasties like facio-hypoglossal anastomosis which Joseph Beck has just brought into notice by his report of six cases.

Thus we see how our work has been broadened by the study of adjoining fields, how our neighbors have yielded to us possession of some of their choicest lands and how we have assimilated them so that our portion is now a well-outlined part of medicine, full of possibilities and encouragement for study. It is not hampered by narrow prejudice or intolerance to progress. On the contrary, we have invited the most serious investigation and we have appropriated the results of research from all departments of science.

The devotees of laryngology and otology have not been content to accept their life work as simply a means for earning a livelihood—they have not been willing to use it as a mere catch-penny device for the accumulation of wealth. They are found earnestly studying their special problems, even though they were required, in the hope of finding solution, to wander into the realms of all the pure and applied sciences. Witness what investigation has been made by Killian in embryology, Denker, Onodi, Cheatle and Turner in anatomy, Siebenmann and Wright in pathology, Wingrave in bacteriology, Fraenkel, Katz and Shambaugh in histology, Zwaardemaker and Bezold in physiology, Edelmann, Gradenigo, Hammerschlag and Kyle in chemistry and physics—research of the highest merit, accepted throughout the world.

From small beginnings, and without great encouragement, we have journeyed through the few years since our establishment and have reached a point in our activity where our work is recognized as one of the great component parts of medicine, respected, honored and commended for its progressive development, for its notable achievements and for the high position which it has attained.

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Original Articles

MIDDLE-EAR SCLEROSIS, OR ATROPHIC MIDDLE-EAR CATARRH.*

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This condition depends on trophic changes and, in contrast to a multitude of clinical forms that have been described under various names, it has a comparatively simple pathology. The clinical appearances vary with the location and degree of the pathologic change and with the structure and tissue affected. However, since the treatment is not dependent on these circumstances, it is only confusing to go into minute details in regard to the clinical pictures. Not only does the appearance change with every conceivable combination of the part affected but also with every stage of the pathologic change. The forms which the sclerosis may assume are as numerous as the combinations of stages and anatomic parts will allow. For instance, the sclerosis may be located in any part of the tympanum and the various pathologic changes may be going on at the same time. Formerly this great diversity caused considerable confusion in our understanding of the subject. In reality, however, the condition is exceedingly simple and includes not only the "dry catarrhal" but also the suppurative process. The symptomatic importance of the otosclerosis varies according to the location of the pathologic change. The most harmful location is that in the neighborhood of the foot plate of the stapes, while the most readily diagnosticated occurs in the drum membrane where the changes are in plain sight.

Otosclerosis begins with a general or localized disturbance of circulation of the mucous lining of the middle-ear tract. This disturbance is irregular in its course and is subject to marked intermissions and remissions, especially at its inception. Anemia may be noticeable from the start or there may be initial hyperemia with fibrosis or hyperplasia of connective tissue. The connective tissue contracts and anemia follows the compression of the blood vessels. This anemia causes the sclerosis. The sclerotic mucous membrane appears stiffened, thickened and gray and sometimes contains macroscopic deposition of lime salts. The sclerotic process first affects the mucous membrane; next the submucous or periosteal layer is affected because the blood supply derived from the mucous layer has been partially cut off. The periosteal layer goes through the same degenerative change as the mucous layer, but with this difference, namely, that here the deposition of lime salts is more extensive and takes the form of hyperostosis.

In spite of the fact that the pathologic changes are identical and that their resultant effects on the function of the sound-conducting mechanism are the same, except for the sloughing and erosion of the suppuration, it is not customary to consider the results of suppuration under the head of otosclerosis. The chief cause of great loss of hearing after suppuration of the middle ear is sclerosis. This is not, however, the special result of suppuration; that is to say, the great impairment of hearing is due not to the loss of parts but to the fact that the functions of the remaining parts have been impaired. This impairment is brought about by contractions of the fibrous tissues consequent to the inflammation and stiffening of the mucous and submucous layers.

We shall only mention in passing the labyrinthine extension of otosclerosis in hyperostosis and rarifying osteitis of the labyrinth capsule. As a consequence of the altered nutrition of the periosteal layer of the tympanum, the adjacent bone suffers from malnutrition, so that vascularization sometimes results and hyperostosis may take place to such a degree that the fenestral and labyrinthine spaces are obliterated.

The etiology of these mucous membrane disturbances of the middle ear is varied. The most important cause is circulatory disturbances of the tympanum following reduced patency of the Eustachian tube. The next most important cause is the result of fibrosis from inflammatory processes of the tympanic mucosa, resulting in decreased blood supply due to fibrous contractions and the shutting off of the vessels. The least common cause is found illustrated in the so-called otitis media catarrhalis insidiosa. Here there is absence of primary middle-ear change other than the altered vasomotor action due to impaired function of the general or sympathetic nervous system consequent on general or nerve exhaustion chiefly occurring in menstrual or puerperal difficulties or in mental strain.

In most cases the diagnosis is readily made by inspecting the drum membrane. If the tissue of this membrane shows any changes other than those due to acute inflammation or loss of continuity, sclerosis is thereby indicated. These changes are increased or decreased transparency of long chronicity, and increased rigidity or relaxation of the membrane. Incipient sclerosis is indicated by subacute inflammatory conditions of the drum membrane with opacity and thickening due to the increase of fibrous tissue. Changes in the color of the drum membrane consequent on chronic congestion of the promontory are also indications of otosclerosis. When the so-called insidious form is present with a normal drum membrane the diagnosis is made by the functional tests which indicate an impairment

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

of the sound-conducting mechanism not to be explained except by reduced stapes mobility.

TREATMENT.

1. Treatment is directed to the correction of the systemic primary cause of the disturbed tympanic blood supply. Most important are general hygiene and systemic tonics, rest and correcting any local cause of the general nervous disturbance.

2. Treatment is directed to the nasopharynx in order to remove the causes of disturbed tympanic blood supply. The nasopharynx must be put in as perfect physiologic condition as possible.

3. Treatment is directed to the tympanic or tubal cause of altered tympanic blood supply which must be improved by local medical and surgical means. The tube must have its function completely restored. External mechanical obstructions to its action must be removed and astringents applied to the lining membrane.

4. Treatment is directed to the substitution of normal cell elements for the pathologic results of the sclerotic process. It is desirable to stimulate the tympanum violently in order to excite a reaction by which new blood vessels are formed and the circulation is restored, part of the sclerotic tissue absorbed and the normal tissue stimulated.

5. Treatment is directed to the restoration of the functions of the various parts of the sound-conducting mechanism. To this end we have at our disposal the various forms of massage and inflation. These are all good if used with caution. The indications for their use are restoration of normal mobility to these parts. Counter indication is the hypermobility due to stretching of the connective tissue beyond its limit of elastic recovery.

PROGNOSIS.

The prognosis without treatment is that the otosclerosis will follow an irregular course with increasing loss of hearing. Prognosis with treatment is favorable inversely with the advance and importance of the location of the sclerotic process. It is more serious when the foot plate of the stapes is involved and less so when the drum membrane is the part chiefly affected. Prognosis is good for arrest of the process. It is also good for improvement of hearing except in the extremely advanced cases. Sometimes the results of treatment are negative, and consequently chronic progressive deafness continues on its course unobstructed. More often there is very satisfactory improvement in hearing and arrest of the process. Most often there is an amelioration of the deafness and an arrest of the process. The result of the author's experience has been that 90 per cent. of advanced cases have improved; in the other 10 per cent., in spite of treatment, no improvement of the deterioration has followed; and 100 per cent. in the less advanced cases have shown an improvement.

CASE 1 (No. 14765).—Otosclerosis due to general causes.

History.—A physician, aged 44, had noted some deficiency in the hearing of the right ear for several years. Of late this had been growing decidedly worse. He had been very much overworked.

Examination.—There was slight opacity, retraction and contraction of both membranes; the left ear was the worse. Eustachian tubes were pervious but not normal. There was slight relaxation of the drum membranes. Watch was heard in the right ear at 7 inches; in the left at 11 inches. Low tone limit: In right ear, 67 single vibrations; in left ear, 61 single vibrations. High tone limit: In right ear, 40,000 single vibrations; in left ear, 42,000 single vibrations.

Treatment and Result.—Thirty-seven days later, after better hygiene and a little rest, but no local treatment after the first visit, the drum membranes were improved in appearance. Hearing for the same watch: Right ear, 13 inches; left ear, 16 inches. The improvement, he says, has continued to increase.

CASE 2 (No. 14500).—Otosclerosis of nasal origin.

History.—Patient, a woman, aged 38, had been troubled with poor hearing for a long time and had received much treatment by many specialists.

Examination.—There was slight tinnitus, deafness and stuffed feeling. The drum membranes were thickened and slightly depressed; the light reflex was very small. Right ear heard watch at 9 inches; left ear at 21 inches. Low tone limit: Right ear, 67 single vibrations; left ear, 23 single vibrations. Turbinals were thickened and there was pharyngeal lymphoid hypertrophy.

Treatment and Result.—Valsalva inflation was positive and improved the hearing. Nitrate of silver was applied to the nasopharynx. Two days later the left ear heard watch at 5 feet; the right ear at 24 inches. Patient was perfectly satisfied with the result and has remained so a year and a half.

CASE 3 (No. 14640).—Otosclerosis due to disturbance of the Eustachian tubes.

History.—A physician, aged 41, first noticed defect in hearing fifteen years ago, following scarlet fever There was no pain or suppuration at that time.

Examination.—The right membrane when first seen, was contracted, color fair; the left membrane was white and contracted. Tubes were patent with slight obstruction to Valsalva inflation. Watch was not heard. Politzer's acoumeter was heard at 5 feet in the right ear; at 7 inches in the left. Low tone limit: 256 single vibrations for both ears. High tone limit: Left ear, 34,000 single vibrations; right ear, 30,000 single vibrations. Bone conduction was reduced in both ears.

Treatment and Result.—Stimulating astringents to nasopharynx and mouth of tubes. A month later right ear heard Politzer's acoumeter at 9 feet and the watch at 2 inches; left ear heard the acoumeter at 54 inches. Patient says that hearing has continued to improve.

CASE 4 (No. 12029).—Otosclerosis consequent to acute catarrhal inflammation of the middle ear.

History.—A woman, aged 40, had a severe attack of influenza eleven years ago. At that time there was no pain or discharge, but deafness and buzzing, like a buzz-saw and sounds of escaping steam.

Examination.—Both membranes, when first seen, were depressed and cloudy. Low tone limit by air: 118 single vibrations in both ears. High limit: 78,000 single vibrations in both ears. Politzer's acoumeter was heard in right ear at ¾ inch; in left ear at ½ inch.

Treatment and Result.—Four days later, after astringent stimulation of the mouths of the tubes the hearing tests were: Politzer's acoumeter in left ear was heard at 5 inches; in right ear at 13 inches. Tinnitus occasionally stops now, and when present it is very faint. Improvement has been maintained.

CASE 5 (No. 12021).—Otosclerosis characterized by thick, opaque drum membranes.

History.—A man, aged 54, had noted that he was growing deaf of late.

Examination.—The drum membranes were white, opaque and flat; the right ear was the worse. Politzer's acoumeter was heard at 1 inch.

Treatment and Result.—Three weeks later, after treatment with nasopharyngeal stimulating astringents and inflation, acoumeter was heard at 6 feet.

CASE 6 (No. 14409).—Otosclerosis due to deposition of lime in the drum head.

History.—A man, aged 69, who appeared very old, had had increasing deafness for eight years, with buzzing tinnitus. There was a bad family history for deafness in old age.

Examination.—Membranes were slightly depressed and opaque; there was calcification of interior superior quadrant. Acoumeter was heard in the right ear at 7½ inches; in left ear at 5½ inches. Watch was not heard by bone or air. High limit tone perception: In left ear, 46,000 single vibrations; in

right ear, 30,000 single vibrations. Low tone limit: 67 single vibrations in both ears.

Treatment and Result.—Astringents; stimulation of nasopharynx and nasal fossæ. Five months later the right ear heard the watch at 1½ inches. Improvement continued for a year, when hearing began gradually to decrease from rapid senile deterioration.

CASE 7 (No. 14214).—Atrophic thinning of the drum membrane.

History.—Woman, aged 49, had deafness which had been increasing for many years.

Examination.—Left tympanic membrane was thin and transparent. Tube was patulous. In left ear, Politzer's acoumeter was heard at 4 inches; in right at 12 inches.

Treatment and Result.—Astringents to nasopharynx; splint on the drum membrane and massage. Forty-five days later Politzer's acoumeter was heard in the right ear at 8 feet; in the left, at 6 feet. The improvement continued to increase and has remained satisfactory.

CASE 8 (No. 13092).—Rigidity of major ossicles.

History.—A woman, aged 35, had deafness following influenza, slowly increasing for five years with annoying tinnitus.

Examination.—Membranes were retracted with normal color; there were no light reflexes. Siegle showed malleus immovable. Tubes were impervious to Valsalva inflation. High tone limit: 38,000 single vibrations. Low tone limit: 256 single vibrations. Politzer's acoumeter was heard in the left ear at 2½ inches; in the right at 3 inches.

Treatment and Result.—Inflation and stimulating astringents to nasopharynx. Eight weeks later, light reflexes had returned. Politzer's acoumeter was heard in the left ear at 6 inches; in the right at 13 inches. Mobility of malleus was partially restored.

CASE 9 (No. 14177).—Relaxation of major ossicles.

History.—A woman, aged 39, in the left ear had patulous tube; there was paracusis of Willis. She had had constant tinnitus for twelve years; whistling like ferry-boats for ten years, and later a noise like escaping steam and a noise like that from the effects of quinin. Attempts at listening increased the tinnitus.

Examination.—Politzer's acoumeter was heard at 34 inches. Tympanic membrane was slightly thickened; it moved bodily outward on inflation, carrying with it the malleus, short process and all. Perception of low notes was decreased; of high notes, increased. Bone conduction was much increased.

Treatment and Result.—Application of collodion to the drum membrane and stimulating astringents to the nasopharynx. After forty-five days the ossicles seemed to be held in place more tightly. Politzer's acoumeter was heard at 8 feet. Improvement continued.

CASE 10 (No. 14268).—Stapes fixation, not osseous. Improvement following treatment and marked recrudescence of the affection on interruption of treatment.

History.—A woman, aged 45, had been deaf for twelve years; the condition was first noted after birth of a child. She used to have loud tinnitus; now she has but little. She had neurasthenia two years ago.

Examination.—Tympanic membrane in right ear was sunken and clear, but dark; good reflexes. Left ear was about the same. There was some congestion of malleus. Siegle showed mobility of mallei. High limit tone perception: Galton in left ear, 43,000 single vibrations; right ear, 26,000 single vibrations. Politzer's acoumeter was heard in right ear at 1 inch; in left ear at 1½ inches. Low tones were deficient. Bone conduction was slightly increased. Gillette test was negative.

Treatment and Result.—Stimulating astringents to nose and nasopharynx, and aural massage. Four months later Politzer's acoumeter was heard in right ear at 8 inches; in left at 6 inches. The treatment was interrupted. A year later the above-noted improvement was lost. Politzer's acoumeter could not be heard in right ear; and in the left ear it was heard at 1 inch. High tone limit: Right ear, 16,400 single vibrations; left ear, 23,000 single vibrations. Bone conduction was somewhat reduced. She could hear loud conversation at 6 inches. The membranes looked well, but were slightly congested.

CASE 11 (No. 13036).—The insidious form of middle ear catarrh with a drum membrane that appeared normal. One year's duration.

History.—A man, aged 24. Deafness in the family.

Examination.—Drum membrane was normal. There were buzzing tinnitus and sounds like the ocean, and various other noises. Politzer's acoumeter was heard at 12 inches.

Treatment and Result.—Astringent application to the nasopharynx. Fifty-two days later Politzer's acoumeter was heard at 8 feet. Watch was heard in right ear at 6 inches. Tinnitus was very faint. The improvement has continued.

CASE 12 (No. 13071).—Otosclerosis with tympanic congestion.

History.—A woman, aged 74, in whom hearing had been diminished some years.

Examination.—Drum membrane had small reflexes, good color; it was contracted but not retracted. Politzer's acoumeter was heard in right ear at 10 feet; in left ear at 2½ inches. Watch was not heard.

Treatment and Result.—Intranasal and nasopharyngeal treatment for thickened mucosa with stimulating astringents. Twelve days later Politzer's acoumeter could be heard in right ear at 15 feet; in left ear at 42 feet. Two years later the same watch could be heard at 4 inches in both ears. Improvement continued; there was very slight decrease during four years, due to senile change.

CASE 13 (No. 14411).—A resistant case of otosclerosis.

History.—A man, 37 years old, in whom ten years of deafness "followed a series of bad head colds; took a year for it to get bad."

Examination.—Tinnitus was variable; sometimes loud. He heard loud sounds but understood no words. He read lips fairly well. Valsalva inflation was imperfect. Tympanic membrane in right ear was flat, retracted, thick and pink; in left ear it was the same, but white. I could not make an accurate test of the hearing power, it being extremely slight.

Treatment and Result.—Many varieties of treatment were employed for a year and a half without any apparent effect on the ears except to make the tubes nearly normally patulous. After seven months of treatment, Edelmann-Galton whistle could be heard in left ear; 24,000 single vibrations, heard by air positively. After four months, Edelmann-Galton whistle (10,426 single vibrations) could be heard in the left ear; right ear, 13,800 single vibrations. Four months later Valsalva inflation was nearly normal. Edelmann-Galton whistle could be heard. High tone limit: In right ear, 6,800 single vibrations, heard at 3 inches; in left ear, 9,950 single vibrations. Left ear could hear 6,800 single vibrations at 11 inches.

SUMMARY.

Otosclerosis is due to trophic changes when disturbances in the blood supply have produced malnutrition of the tympanic contents and walls. The primary causes of the changed circulation are local and general. All varieties of chronic middle-ear catarrh and the stiffening following middle-ear suppuration are various phases of middle-ear sclerosis. Except in very advanced cases, the prognosis is good for arresting the process and improving the hearing.

DISCUSSION.

DR. NORVAL H. PIERCE, Chicago: For the diagnosis of otosclerosis two factors are necessary, a patulous tube and an unaltered tympanic membrane, a membrane that appears by otoscopy to be quite normal. In some cases there may be other changes, changes in the tympanic membrane, in the Eustachian tube. Then other factors are present which are entirely foreign to otosclerosis. It may be that Dr. Bryant uses the term in a different sense from the way I do. Indeed, the retention of the term "otosclerosis" is unfortunate as it is misleading in its significance; "spongification of the labyrinthine capsule" is more exact, and gives at once to the mind an intelligent idea of the location and character of the pathologic process. Bezold gave us the following points in diagnosis in connection with absence of change in the Eustachian tube

and tympanic membrane: progressive deafness, considerable loss of hearing for the lower tones, about thirty-six double vibrations a second, the osseous conduction for the A fork greatly increased, and the osseous conduction for the small A-1 fork greater than the aerial conduction. By manometric tests at postmortem on Bezold's case it was found that the footplate of the stapes was fixed in the fenestra ovalis. Microscopic examinations showed that there was osseous fixation and that these changes were due to a resorption of the normal ivory-like bone in the capsule and the reposition of soft, spongy bone which had for its end stage a morphology similar to the cancellous tissue of the long bones. There was no change of this sort in the bone of the tympanic cavity other than about the footplate of the stapes, nor was there any change in the contents of the cavum. This was later proved by more than a hundred postmortems. There is one other type, and that is the one in which this spongification takes place elsewhere than about the foot plate of the stapes. There may be areas of spongification about the various semicircular canals and the cochlea without stapes fixation. These cases are just the reverse of stapes anchylosis. There is shortened negative Rinné, lessened osseous conduction, without loss in the lower scale. This is confirmatory of Helmholtz' theory that the dense walls of the labyrinth act as a resonance organ of the internal ear. All through Nature, wherever there is a cochlea, that cochlea is surrounded by dense, ivory-like bone. It is necessary for normal hearing. When it becomes softened or cancellous, and changes in relation between the perilymph and the lymph circulating through the bony channels occur, then we have the various phenomena that exist, the tinnitus and the deafness in otosclerosis. In Dr. Bryant's cases there is no otosclerosis. His cases are tubal in their nature, as evidenced by the changes in the tympanic membrane and the increase of audition following inflation. We have the most happy results in our treatment of these cases. But when the diagnosis of otosclerosis or spongification of the labyrinthine capsule is made it were best to abstain from inflation, massage and all of those manipulations which in middle-ear disease are beneficial. Not only are these operations without benefit in otosclerosis; they are harmful. The patient should be cautioned against exhaustion from whatever cause, together with overheating or chilling of the body, as any of these conditions may be and all have been followed by most disastrous and sudden progress in the course of the disease.

DR. C. F. WELTY, San Francisco: Dr. Bryant's classification is wrong and confusing. Otosclerosis is dependent on a definite pathologic lesion of the sound-perception and the sound-conduction apparatus. If cases are permanently benefited by treatment, they are cases of some other pathologic lesion than otosclerosis. The appearance of the drum membrane has nothing whatever to do with otosclerosis. Occasionally a pinkish appearance of the membrane is produced by the color of the inner ear showing through an atrophic drum membrane. Grunet said that all such cases were made worse by treatment. The cases of otosclerosis that come to me are returned to the physician sending them with a statement that more good can be accomplished by keeping the patient in good health physically than by anything an otologist can do. Kerner says that all cases of otosclerosis are hereditary, and that the only recommendation to be given these people is not to marry. For the last two years I have been advising all married female patients with otosclerosis not to become pregnant, for with each pregnancy the deafness and tinnitus is increased; and if any do become pregnant an early abortion should be done, so that the ears will not materially suffer. I am not positive that this early abortion will prevent the increase of the ear symptoms. However, in the light of modern therapeutic abortion, it should at least be considered.

DR. E. R. LEWIS, Dubuque: Dr. Pierce and Dr. Welty have given an absolutely unfavorable prognosis in these cases of otosclerosis which I think possibly is a little extreme. I agree absolutely that the sclerosis is a distinct entity in which the prognosis is generally very bad; but Politzer has reported having seen some improvement in cases which were associated with the gouty diathesis and hereditary syphilis, and these cases have shown slight improvement under his treatment directed against the particular diathesis that the patient showed.

DR. NORVAL H. PIERCE, Chicago: I said nothing about the prognosis in cases of otosclerosis. It has been misnamed progressive deafness. Some of these cases are not progressive at all. They begin and continue for years with only the slightest amount of deafness. There are cases, unfortunately, that have very rapid progress, but these are very rare, as a matter of fact. It is the rule in the otosclerosis or spongification of the labyrinthine capsule that they reach a certain stage and stay at that point for years. The prognosis, therefore, as regards hearing in spongification of the labyrinthine capsule is not necessarily very bad.

DR. J. HOLINGER, Chicago: What does Dr. Bryant call atrophic middle-ear catarrh? Where is the atrophy? What is the pathology of his atrophic middle-ear catarrh? I have been speaking about these tuning-fork variations, about the pathology of these cases for nearly ten years. The prognosis of these cases is, as Dr. Pierce says, not at all so bad as to complete loss of hearing; but as to complete recovery of hearing it is bad. I have still to hear of or see a patient that regained his hearing in a case in which the tuning-fork examination and the history were clear. One point, however, in the treatment has been overlooked, and I think it important. Patients should be guarded from any overexertion. That comes back to the question of blood pressure; not low blood pressure, but high blood pressure. If these patients with otosclerosis constantly overwork, work sixteen hours a day and overdo everything, very likely the deafness will increase to total deafness. This is the explanation why all massage treatments invariably are followed with bad success in these cases.

DR. J. E. LOGAN, Kansas City, Mo.: I believe that Dr. Bryant has outlined in his paper more the effect, or the sclerotic conditions pure and simple as they exist in the middle ear, producing an atrophic condition of the drum and not the spongification spoken of by Dr. Pierce. To my mind the scleroses of the middle ear are so dependent on the ventilation of the middle ear through atrophic changes manifested in the tube, that whenever the tube has been obstructed or there has been a lack of ventilation of the middle ear, atrophic changes take place. With fifteen pounds pressure to the square inch on the outside and less than that, or none, inside, changes such as named are bound to take place. The conditions found in otosclerosis are entirely different from those resulting from the spongification of the labyrinthine capsule or the petrous portion of the temporal bone. But ventilation is necessary. In regard to the patulous tube, although apparently there may be plenty of ventilation, or plenty of opening, often there is closure of that canal throughout some of its course; strictures may exist, and I think it would be well in every case to investigate by means of the bougie.

DR. GEORGE E. SHAMBAUGH, Chicago: The term "otosclerosis," used to include adhesive forms of middle-ear disease, simply helps to perpetuate a misconception in regard to the real nature of otosclerosis. The term was originally applied to this condition by von Tröltsch, because of a misconception regarding the real pathology of the trouble. If we examine a number of cases of deafness, and attempt to make a diagnosis of the cause of deafness from the appearance of the drum membrane, the cases will naturally be divided into two groups: First, those cases in which the thickening, retraction or scarring of the membrane points to middle-ear disease as the cause of deafness; and, second, those cases in which a perfectly normal drum membrane points to internal-ear trouble as the cause of the deafness. When this second group of cases is tested with the tuning forks, it will be found that in some of the cases the tuning-fork tests will indicate clearly diseases of the sound-perceiving apparatus as the cause of the deafness, whereas in other cases the tuning-fork tests will give all the typical reactions characteristic of disease of the conducting mechanism. It was to this last group of cases, in which was found a normal membrana tympani and Eustachian tube, and in which the tuning-fork tests indicated obstruction in the conducting mechanism as the cause of the deafness, that

von Tröltsch applied the term "otosclerosis," meaning an atrophic form of middle-ear catarrh as distinguished from the hypertrophic form which invariably produced decided alterations of the membrana tympani. We now know that a primary atrophic form of middle-ear catarrh is not the pathology of these cases of otosclerosis, but that we have in reality to deal with a primary disease of the bony capsule of the labyrinth, and that the tuning-fork tests pointing to obstruction in the conducting mechanism are explained by the fact that this disease of the capsule quite early produces a bony fixation of the stapes in the oval window. In every case examined postmortem in which, from the appearance of the drum membrane and the tuning-fork tests the diagnosis of otosclerosis had been made, without exception, the anchylosis of the stapes as the result of disease of the labyrinthine capsule has been found.

As to prognosis, when we understand the pathology of otosclerosis there can be no question as regards improving the condition when bony fixation of the stapes has taken place. In some of the incipient cases, however, before the stapes becomes firmly fixed, a decided improvement in the hearing will occasionally result from inflation of the tube and massage of the ossicles. Such improvement is, however, only temporary, as the progress of the disease will overcome any loosening up of the stapes that may be brought about. I mention this particularly because the statement is often made that in incipient cases the diagnosis between otosclerosis and middle-ear catarrh can be made by noting the improvement from treatment in middle-ear catarrh, whereas in otosclerosis no improvement is possible. This is, however, not strictly true.

PSYCHOTHERAPY.*

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Some physicians, like men who are told that they have used prose all their lives without knowing it, are astonished at the statement that no small part of their function as practitioners consists in the use of psychotherapeutic influences. Ever since the primitive mother began to kiss the sore finger of her crying child to make it well the human race has, partly instinctively, partly consciously, resorted to mind cure in one or another of its diverse forms to assuage its sorrows, to relieve its anxiety or to mitigate its pain. For these alleviations, sometimes priests, sometimes physicians, sometimes laymen have been agential.

There has been much disagreement as to the definition of the word "psychotherapy." Some have supposed that it is synonymous with treatment by hypnotism or suggestion; others have assumed that it is limited in its applicability to psychic diseases and still others have fallen into the error of regarding its effects as wholly psychic (in the abstract or metaphysical sense), not realizing that, in medicine, guided by the conception of psychophysiologic identity, such purely psychic influences are not conceivable. As medical men, we may be permitted, at any rate for purposes of description, to distinguish as psychical, the subjective side of brain activity, and as physical, the objective side of it, even if we admit that our total knowledge of the latter results from phenomena or psychic events, the external cause of which is obscure. Asking permission then of the metaphysically inclined to speak in these terms as thus medically defined, it may be said that we know of no way of affecting a human being psychically except through stimuli which excite his afferent nerves, or through stimuli applied directly to his brain. The nerves carry the excitation to the central nervous system and traversing chains of neurons impinge finally on the neurons of the cerebral cortex. Certain of the excitations here set up correspond to certain sensations, feelings and ideas. Pure sensations and pure ideas, independent of physical conditions in the cerebrum physiologists assume do not exist. If this assumption be accepted then it is obvious that any influence which exerts a psychic effect also produces a physical change in the body, and we can well understand how physical and chemical influences which lead to alterations in the structure and function of the neurones of the pallium may have a profound effect on the psyche. In other words, every form of psychotherapy is also a form of physical therapy, and to avoid confusion with spiritualism or other mystical conceptions it might be better to speak of psychophysical influences and psychophysical therapy than to use the terms in vogue. Medical psychotherapy knows nothing as yet of telepathy or thought-transfer through other than recognized physical channels. In the present state of our knowledge at any rate *eine Psychotherapie ohne das Mittelglied der Empfindung ist Humbug.*

Psychotherapy has through the ages been instinctively practised but only comparatively recently has it begun to be consciously and systematically used. Suggestion is, and always has been, one of the most powerful of remedial agents.

At all times a large part—not all by any means—of the treatment of disease by drugs has in reality consisted of psychotherapy. Certain examples of this stand out conspicuously in the history of medicine. The use of theriaca had great vogue for centuries after its introduction by Andromachus of Crete. Orvietan was long believed to be a sovereign remedy against poison, the opinion being almost universally received by the learned as well as the vulgar. Red coral was strongly recommended by Rhazes in certain cases and antimony was at one time (after the cure of Louis XIV. in 1653) the most frequently prescribed of drugs. When one thinks of the enormous number of substances and preparations which have come and gone, each highly vaunted in its time for its marvelous effects, one begins to realize the larvate psychotherapy in treatment by drugs. This pharmacal psychotherapy has for the most part been instinctive, the physician believing in the virtues peculiar to the drug, and the patient believing in the physician. Sometimes psychotherapy by drugs has been consciously employed, as in the use of the placebo and in the pill of methylene blue. One thing that makes judgment so difficult regarding pharmacotherapy in any given case is the lack of means of determining satisfactorily the part which psychic influences have played in the result obtained. We must be grateful to experimental pharmacology for the help it promises to bring. It has been well said that "it is we ourselves who give to many medicaments their efficacy, and their good effects persist as long as does the faith of physicians and patients in their virtue."

The cures which from time immemorial have been attributed to magic or to supernatural means are naturally regarded by medical men as instances of success through psychotherapy also. It was the belief of the patient which did the work; shrewd Paracelsus, physician and alchemist, writing of faith-cure four hundred years ago said: "No matter whether the object of your faith is real or false, the results you get will be equally good." Read the accounts of the way the won-

* Read in the Symposium on Therapeutics, at the Twenty-third Annual Meeting of the Association of American Physicians, Washington, May 12, 1908.

derful results were obtained by treatment in the temples of Isis in Egypt and those of Æsculapius in Greece and you will find recorded an elaborate organization of suggestive measures which rivals that of the best equipped modern sanatorium. Indeed, in the pilgrimage to the temples, the preparatory practices, the temple walks, the sacrifices with musical accompaniment, the prayers, the therapeutic conversations with the priests and, above all, the oracular dreams, we recognize a series of experiences so pregnant with psychotherapeutic possibilities that we wonder whether some healers of to-day are not too simple or too lackadaisical to make their work effective.

The doctrine of magnetism dates from Paracelsus' time; out of it grew mesmerism at the end of the eighteenth century, and it was one of Mesmer's pupils who, following the example of his master and trying to cure by the "universal fluid," accidentally threw a patient into hypnotic sleep. The history of hypnotism has been so often and so well written that I need not deal with it here. The scientific studies of Braid, Liébeault, Bernheim, Charcot and Janet (to mention chiefly foreign names) have thrown a great deal of light on hypnotic phenomena, and even those who are opposed to the use of hypnotism as a therapeutic agent can scarcely fail to be grateful for the new knowledge gained concerning the human mind through investigations into its nature. The study of hypnotism too has led to a great increase in interest in the effects of suggestion made in the waking state, both heterosuggestion and autosuggestion.

More important, perhaps, has been the revival and development of psychotherapy by persuasion rather than by suggestion; in this form of mental treatment the higher mental powers of the patient are directly appealed to, the cure being brought about largely through the re-education of the patient by rational therapeutic conversations instead of through the exercise of authority or through mere unmotivating suggestion. DuBois of Berne, Dejerine and his pupils in Paris, Oppenheim in Berlin and various clinicians in this country have been especially interested in this form of psychotherapy.

Isolation as a psychotherapeutic measure should not go unmentioned. It is the great merit of Dr. Weir Mitchell that he saw the protective benefits of isolation and realized its aid in instituting any regular physical and psychical régime in the treatment of the severer forms of the psychoneuroses; he made it an important element in his so-called rest-cure and others who employ it in selected cases are loud in its praise.

A striking fact about several forms of psychotherapy is their origin, at least in germ, outside of the ranks of the medical profession. Isolation, for example, arose in antiquity as a self-inflicted discipline in the practices of the anchorites, hermits and monks, who withdrew themselves from society into deserts or solitary places, sometimes as a penance, but more often to avoid the temptations of the world, to devote themselves to contemplation and religious exercises, and to attain to a peace and calm otherwise denied them. To many men and women there come times in life when separation from the world seems to be a necessity; they feel that they must get away from people, from the duties of society, from an unsatisfactory environment. The "retreat" of the Catholic church meets this need for some. The summer vacation in the wilderness satisfies it for others.

Psychotherapy by suggestion was largely extramedical in source. It began in the form of secret remedies of quacks, in the performance of miracles, in the use of charms, philters, talismans, amulets, phylacteries and mezuzahs, and in the application of magnets and metals. The laity have been fertile in the devising of impressive suggestive measures from the earliest times down to the era of Perkins tractors, proprietary medicines and electric belts.

Even persuasion, the last psychotherapeutic method to be thoroughly employed consciously by physicians, dates back to the stoic philosophers with Seneca as a type, and to the confessors and moral directors of the church. These men worked out excellent methods for helping the aboulic and the victims of morbid scruples to overcome their inertias, their doubts and their fears.

In the United States, the development of psychotherapy outside the medical profession has been perhaps as notable as inside it. Nowhere, unless in Germany, have "patent" and proprietary medicines been more in vogue. In the wide-spread mind-cure movement here we see a development of great importance, designated by one of our leading psychologists as the only decidedly original contribution of the American people to the systematic philosophy of life. The "new thought" advocates and the christian science healers combine suggestion in the waking state with more or less persuasion; in the "Emmanuel church movement" (which through medical aid separates so-called organic from so-called functional cases) the clergymen who treat the functional disorders use suggestion in the waking state, persuasion, and also, to some extent certainly, suggestion in hypnosis.

Despite the fact that psychotherapy has been so prominently extramural in source and prevalence it is to be said for medical men that when convinced of its efficacy and legitimacy they have been willing to adopt it. Further, for the foundation of the theory of the subject and for nearly all actual scientific knowledge regarding it the world has to thank the investigations of members of our profession. Any neglect, recalcitrance or protestation on the part of physicians in the matter have been due, in my opinion, partly to a desire to avoid even the appearance of evil and humbug, partly to the exercise of so much zeal in those physical, chemical and biologic studies which are flooding our science with new light that less time and attention have been devoted to psychologic and psychiatric studies than they deserve.

While the main field of application of psychotherapy is in the treatment of the psychoneuroses, it has also functions in combating the psychoses on the one hand and the whole group of somatic diseases on the other. All symptoms which can be influenced by the nervous system are more or less accessible to psycotherapy. Moreover, in the carrying out of any physical methods of treatment the patient must be led to have belief in their efficacy and he must be brought to a willingness to do what is recommended. The establishment of medical obedience, as well as the awakening of confidence, which precedes it, are essentially psychotherapeutic procedures.

Attempts have been made to classify psychotherapeutic methods into: (1) those which act chiefly by virtue of the particular feeling-tones (in the pleasure-pain series) which accompany the sensations called forth by the method used; and (2) those which act through the intellectual processes excited by the measures employed. The former are naturally more successful in affective disturbances, the latter in intellectual. But the mind is after all a unity and we nearly always have to deal

with both classes of disturbances in the same individual and therefore require to use both sets of methods.

In treating abnormal affective states we may try to get rid of the painful sensations and ideas (negative feeling-tone) by the substitution of pleasurable sensations and ideas (positive feeling-tone). Amusement, diversion, exercises are resorted to for this purpose. We encourage the patient to go to the play or the opera, to play golf or bridge or "what-am-I," to enter more fully into social life; or we recommend a trip to Atlantic City or to Hot Springs or to Europe. We help the handicapped to find suitable remunerative occupation and we try to transplant the misunderstood into a more sympathetic environment. The methods of treatment in which rewards and penalties are used also come in here; they may be employed with patients of all ages but require infinite tact on the part of the physician; individualization must always be kept carefully in mind.

In treating patients through the intellect we use either suggestion or persuasion. Very different definitions are given to these two terms by different writers. In suggestion, we make no effort to use ideas which will explain to the patient why his interpretations of his symptoms are wrong, but we tell him they are wrong and rely on the authority we have over him to make the suggestive idea effective. Or in some other way we make the mind of the patient (without his control) accept some good idea. When using persuasion we lead the patient by means of his reason (with his control) to accept an idea and so to arrive at a new opinion. We speak of heterosuggestion or heteropersuasion in these cases, but we should similarly discriminate between autosuggestion and autopersuasion. In autosuggestion one fixes in his own mind an idea the truth or falsity of which he has not carefully examined and criticized; when on the other hand the idea is not accepted until carefully verified the instance is one of autopersuasion or self-instruction.

Heterosuggestion may be given in the waking state or in hypnosis. In order that suggestion may be successful, faith in authority must in some way be aroused. Quacks excite this authority idea by non-ethical, illegitimate methods. Marvelous therapeutic results are advertised and testimonials of the cured are distributed. Priests help to arouse it by moral and religious appeal, sometimes ascribing the cure to supernatural agencies. The pilgrimages, prayers, relics and heaps of crutches help to enliven faith. "New thoughters" advertise the successes resulting from the acceptance of what they regard as an important philosophic system, involving among other things a belief in the saving grace of optimistic moods and healthy-minded attitudes. Christian science does it by combining the ideas of religion and philosophy into a system, denying the existence of disease, and advertising widely the cures of those whose symptoms have disappeared as soon as they have fully accepted the doctrine.

Physicians awaken confidence and inspire the idea of authority by their scientific training, and by their mode of inquiry and of examining the patient. The young man without reputation can arouse faith if he have a suitable personality and be well trained in the methods of taking the anamnesis and of making the physical examination. Blood counts, bacteriologic cultures, determination of opsonic indices, tuberculin tests, sphygmographic tracings, *x*-ray photographs and the whole paraphernalia of clinical diagnosis not only give real information to the physician but they also excite belief. After the thorough examination, a definite diagnosis, briefly stated to the patient, prepares him to hear what the treatment is to be and leads him to submit to it hopefully.

Suggestion in the waking state may be larvate or direct. In treating functional nervous disorders many physicians resort to larvate suggestion. They recommend massage, or a diet, electricity or a drug or a combination of several measures and tell the patient that he will get well. They see the patient again from time to time and assure him that he is incontestably better, and try gradually to establish in him the conviction that he is being cured and, finally, that he is cured. The conscientious physician (when using larvate suggestion) does not, as a rule, prescribe measures which can not of themselves do any good whatever, but always tries to use means which will, through their physical effect on the body, aid at least to some slight extent the psychotherapy in restoring health. The more faith he has himself in the bearer of the larvate suggestion the more, other things equal, he is likely to excite in his patient.

The advantage of hypnotic suggestion lies in the greater susceptibility of the patient to heterosuggestion in this sleeping state. Every *hypnotiseur* develops his own technic of producing hypnosis though all the methods have in common the suggestion of sleep. The patient's belief is aroused before hypnosis is undertaken and the sleep is suggested, usually by the aid of certain physical methods (fixation of sight on a bright object; strokes or passes; pressure on the eyes, etc.). No rigid routine is satisfactory; any method must be adapted to the individual case, and the most skilful hypnotizers are resourceful in little tricks which aid in strengthening the suggestion and in inducing sleep. Therapeutic suggestions, repeated several times, are usually given in the more superficial stages of hypnosis (somnolence and hypotaxia) rather than in the more dangerous deeper stages (somnambulistic sleep with hallucinations and amnesia). The dangers of hypnosis have been exaggerated by some and under-estimated by others. We know now pretty well what they are and methods for avoiding them have been and are being worked out. In this connection the process of de-suggestion as advocated by Bernheim seems to be very important. Certainly no one except a medical man or a trained psychologist should use hypnosis; needless to say, a third person should always be present.

In psychotherapy by persuasion the physician has opportunity for the exercise of the highest powers of his own mind and he makes his appeal to the best qualities of the minds of his patients. The principles are those of education in general; indeed psychotherapy by persuasion might well be designated medical pedagogy. It involves training of the voluntary attention, schooling of the emotions and rational education of the will. It is the most rewarding of the psychotherapeutic methods and seems destined to occupy a large part of the energy of medical practitioners. By its aid the physician is able to rid a patient's mind of harmful ideas and associations, refuting them, or, by ignoring them, leading the patient to forget them. With its help too he creates new ideas and associations in the mind, supplementing perhaps a limited or faulty early education and environment; through occupation-therapy of various sorts he may teach the patient to find health and satisfaction in work. And here the medical psychotherapeutist joins hands with the great army of educators—the teachers, the clergymen and the social service workers of his time.

The diseases chiefly amenable to psychotherapy, namely the psychoneuroses, are most troublesome to treat when their management is not understood, but many a mind with its door apparently permanently closed to healthy influences will speedily open to him who knows how to find the key to its lock. No physician has the key to all the doors he is asked to open; I know of no psychotherapeutist who has all successes and no failures; but any intelligent medical locksmith may learn how to gain entrance to many abnormal minds if he interest himself in the problem. It is saddening and discouraging to meet with some of the somatic derelicts we see in our offices and in the hospital wards (victims of large white kidney, thoracic aneurism, non-compensable myocardial insufficiency, dementia paralytica or carcinoma ventriculi) for in these cases we realize how little as yet we are able to offer them in the way of help. It is gratifying by contrast to see certain of the psychoneurotics who have been, perhaps, miserable invalids for years, burdens to themselves and to their friends, reclaimed by suitable means, made well again and equal to normal life. The limitations of psychotherapy are definite; they are given by the capacity of the individual brain for education and by various physical and social factors. It is matter for satisfaction that its field of application is as broad as workers on the subject are finding it to be. It remains for the future to reveal to us all the opportunities of which we may take advantage in extending and improving the activities of that great organ of adaptation in our bodies—the cerebrum. Here lies a fruitful territory for clinical research.

Psychotherapy has had such a "yellow streak" in it that many medical men have refrained from utilizing to the full the good in it. This is one reason why it is desirable that conservative, scientifically trained men should work with it and let us know their experience concerning its advantages on the one hand and its limitations and dangers on the other. Its use should be preceded in every case by the making of an accurate diagnosis by our best methods. It is no cure-all, but in certain cases it is indispensable, and with all patients it is a valuable supplement to other forms of therapy.

6 Franklin Street, East.

ANEURISM OF THE HEART.

WITH REPORT OF A CASE ASSOCIATED WITH MEDIASTINO-PERICARDITIS.*

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Little space is given to the consideration of this subject in text-books on the principles and practice of medicine, or even in those on diseases of the heart. By the earlier medical writers the term "cardiac aneurism" was used to signify enlargement of the heart. Thus Auenbrugger and Corvisart used the terms "aneurysima activa," signifying enlargement from hypertrophy, and "aneurysima passiva," signifying enlargement with dilatation. Several years later John Hunter and his nephew Matthew Baillie, gave to the term its modern significance, viz., a partial dilatation of the cardiac wall; hence aneurism of the heart was often spoken of as partial aneurism.

In the general literature to-day three different conditions are spoken of under the term aneurism of the heart, namely:

1. Aneurismal dilatation of the coronary arteries, which may vary in size from a mustard-seed to a cherry, may be multiple or single, and is due to sclerosis or embolism of these vessels.

2. Aneurism of the valves of the heart, by which is meant a cavity in the substance of the valve, containing pus or other inflammatory products, clotted blood or débris. These arise from small areas of endocarditis, either on the surface or in the substance of the valve, and according to Drasche, who does not agree with some other authors, is more frequent in the mitral valve.

3. Aneurism of the cardiac wall.

The first two conditions are almost wholly of pathologic interest, but their inclusion under the term "aneurism of the heart" has somewhat confused the statistics on the subject.

It is to the third condition, or aneurism of the cardiac wall, that I shall refer in this paper. This is not of very frequent occurrence, as will be seen from the statement of Philip D. Bourland, who was able to find but two cases reported by American authors during thirteen years prior to 1904. In 1867 Pelvet collected reports of eighty-seven cases from the world's literature up to that time. In 1883 Legg made cardiac aneurism the subject of his Bradshaw lectures, in which he collected reports of ninety cases, probably including those of Pelvet. According to Warthin, more frequent reports of the condition have been made since that time, and there are now in the literature reports of possibly three hundred cases.

REPORT OF CASE.

Patient.—D. R., white, male, aged 49, was admitted to St. Joseph's Hospital, Dec. 24, 1907, to the service of Dr. W. T. Braun, to whose courtesy I am indebted for the privilege of observing the case. The patient complained of shortness of breath and dropsy.

Personal History.—Family history was negative. The patient had frequent attacks of malaria in Arkansas; also had grip, pneumonia and gonorrhea. He was kicked by a mule several years ago, losing the sight of his right eye. He had never had rheumatism and denied syphilis; had used alcoholic drinks moderately and had worked hard. About two years prior to this admission, he came to St. Joseph's Hospital complaining of shortness of breath and dropsy. According to the patient, after a prolonged stay, he returned home apparently well, and had no further trouble until a short time before his last admission.

Present Illness.—He had some pain in the chest, the location of which he was unable to define. It had not been severe, had not radiated to the side of the neck nor to the arm, and had not been associated with the fear of death. He had difficulty in getting his breath, especially on exertion, and at times the dyspnea had been so great as to require him to sleep sitting up. He had lately had some edema of the feet and ankles and had suffered with swelling and fulness of the abdomen.

Physical Examination.—The patient was a fairly well-nourished man. The skin was subicteric, the mucous membranes pale; there was a cataract in the right eye, slight edema of the feet and legs; no glandular enlargements.

Chest: There was dyspnea and slight impairment of respiratory expansion at the left base. There was a pulsating tumor in the chest wall, in the apex region. This pulsation seemed to be expansile and to correspond to the apex impulse. There was no systolic retraction in this area nor in the left back. There was some pulsation of the carotids, though not marked. The jugulars were not distended on deep inspiration and there was no diastolic collapse of these vessels. The peripheral veins were abnormally full. The abdomen was distended, but there was no distention of the abdominal veins.

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

Palpation: Vocal fremitus was possibly diminished over the left lower chest. The pulsating tumor was connected with the apex impulse, which was in the seventh interspace half an inch within the anterior axillary line. It was distinctly expansile. There was no thrill present nor any diastolic shock. It was rather forcible and lifted the palpating finger in all directions. The radials were palpable. The pulse was somewhat irregular in rhythm and much weaker than one would expect from the heaving character of the apex impulse. There was no perceptible irregularity of the pulses nor appreciable collapse. The lower border of the liver could be felt below the right costal border on deep inspiration. The spleen was barely palpable, and there was little tenderness in these regions.

Percussion: The note over the left lower chest posteriorly was very dull, almost flat. The area of cardiac dulness was markedly increased downward and to the left, where it did not extend beyond the limit of the apex impulse. Dulness extended also to the right of the sternum.

Abdominal Cavity.—There was a considerable quantity of free fluid.

Auscultation: Over the lungs the breath sounds were feeble and indistinct at both bases, especially posteriorly. The heart sounds at the apex were distinct and no murmurs were associated with them. At the base there was a soft, feeble murmur, heard only in the third interspace to the right of the sternum. This had very little, if any, area of transmission, and pressure with the stethoscope did not intensify it. Neither the aortic second nor the pulmonic second was accentuated. The urine and blood were not examined.

Diagnosis.—The diagnosis of fibroid myocarditis, hypertrophy and dilatation of the heart with cardiac insufficiency and aneurism of the left ventricle was made. Dr. Frank Jones saw the patient and concurred in the diagnosis.

The patient continued in the hospital, being up and down until February 8, when he expired suddenly on getting up to stool.

Autopsy.—Thirty-six hours after death; nutrition fair, weight about 150 pounds; height about 5 feet 10 inches; skin sallow. Scar 1 x 2 inches just above the right nipple. Globular enlargement over the fifth, sixth and seventh interspaces two and a half by three inches wide, two inches outside the nipple line. Abdomen distended; lower extremities edematous to the body. Rigor mortis not marked. No decomposition. Postmortem lividity in all dependent portions of the body and about the shoulders. Irregularity of the right pupil. Some of the mediastinal glands enlarged. Both pleuræ adherent. The left pleura markedly thickened; no fluid in either pleural cavity.

Pericardium: Adherent to both pleuræ. Both layers thickened. The parietal layer completely adherent to the epicardium, obliterating the pericardial cavity. The heart enormously enlarged and removed with the pericardium; removal effected with great difficulty, owing to the dense adhesions of all the structures in the mediastinum. Weight after opening with all clots removed, 1,145 grams (48.5 ounces). Blood in all the cavities. Chicken-fat clots in the auricles. The walls much hypertrophied and the cavities dilated; the left ventricle wall 1 inch, the right 5/16 inch thick. A large dilatation about the size of an orange sprang from the apex of the left ventricle anteriorly. The communication with the left ventricle marked by a well-defined fibrous ring 2 inches in diameter. The width of the swelling, at the greatest diameter, 5½ inches; depth, 3 inches. The sac formed by roughened endocardium and myocardium (which was thicker on the anterolateral surface, but only about one-fourth as thick as the ventricular wall, the posterolateral wall being apparently without myocardium, very thin), and both layers of the pericardium adherent at the apex to the pleura and a portion of the seventh rib, which was partially eroded. The cavity filled with dark clotted blood.

Pulmonary Orifice: Three and a half inches in circumference, valves thin, smooth and apparently competent. Tricuspid ⅞ inch; valves smooth and closing orifice.

Aortic Orifice: Two and three-fourth inches. Valves not sclerotic. Orifice apparently closed by valves. Slight fenestration of the middle cusp.

Mitral Orifice: Four and seven-tenth inches. Valves normal.

Heart Muscle: Fibroid changes.

Coronaries: Open in the auriculoventricular grooves. Orifices somewhat contracted. Vessels sclerotic.

Root of Aorta: A few recent atheromatous patches.

Kidneys: Enlarged; left larger than the right. Left peculiarly lobulated, containing an old scar and a small cyst. Capsules stripped with difficulty. Surface red; on cut surface, fibrous tissue increased. Cortex somewhat thickened. The organ dripped blood.

Abdomen: Peritoneum smooth except in the hepatic region, and contained a large amount of dark fluid.

Gall Bladder: Filled with a dark greenish fluid; walls thickened. Slight adhesions to surrounding structures.

Liver: Enlarged. Dark red. Surface uneven, hobnail in places. Fibrous tissue distinctly increased. The organ dripped blood. Capsule thickened, presenting the appearance of Curschmann Zuckergussleber.

Spleen: Enlarged. Cut surface dripped blood. Fibrous tissue increased. A supernumerary spleen about the size of an English walnut attached to the organ.

Microscopic Examination.—Sections of tissue were fixed in formalin, embedded in celloidin and stained with hematoxylin and eosin for microscopic study.

Heart: In some areas the terminal coronary arteries were blocked, showing typical anemic infarcts. The fibrous tissue was generally increased. In many areas the muscle cells were necrotic, which seemed to be the result of lack of nutrition. Endarteritis had caused obstruction of the arteries, which formed areas of fibrous myocarditis of, what Cowan describes as, the para-arterial type. There were also areas of fibrous overgrowth—perifascicular fibrosis—which corresponded to the same author's periarterial fibrosis.

Sections through the aneurism showed adhesive pericarditis, degeneration of the myocardium and marked overgrowth of fibrous tissue.

Pathologic Diagnosis.—Hypertrophy and dilatation of the heart, fibrous myocarditis, aneurism of the left ventricle, mediastinopericarditis, cirrhotic liver, multiple serositis, and cirrhotic kidney. The microscopic findings in the liver should have been included, as these are important in connection with mediastinopericarditis.

CAUSES AND USUAL LOCATION OF ANEURISM OF THE HEART.

According to Warthin, aneurismal dilatation of the heart wall may be congenital, due to defective development of the heart muscle, and found in infants and young children. This may occur in any part of the heart wall, but is more frequent in the membranous portion of the ventricular septum.

The acquired form may be acute or chronic. The former may be due to inflammatory process in the heart. In this case the upper part of the septum is likely to be the seat, especially if the result of acute mural endocarditis; or a dissecting aneurism may result. Myomalacia cordis may be the starting point of this form of aneurism, which usually increases rapidly in size and progresses to rupture.

The majority of these dilatations, however, are chronic and result from the weakened cardiac wall giving way under intracardial pressure. This may occur at any age, but more frequently in advanced life. Walshe, writing on the subject in 1851, says that it has hitherto been most frequently observed between the ages of 20 and 30 and in very advanced life, or in those periods of life when the agents are operative in producing the cardiac changes on which the condition depends, namely, syphilis in the young and the various heritages of old age, senility and fibrosis.

For the same reason it is much more frequent in men than in women. In a total of two hundred and eight cases collected by Hare from various authors, he found that 74 per cent. were in males and 26 per cent. in females.

Several pathologic processes have been described as giving rise to the weakening of the cardiac wall which results in aneurism.

According to Cowan, whose admirable work on the fibroses of the heart I have drawn on in the preparation of this paper, the French writers especially have suggested that pericarditis may be an occasional cause of aneurism. He describes the theory of these writers thus:

> If the two layers become adherent over a small area, the point of adhesion will be less mobile than the rest of the heart, and, with each systole, traction will be put on the part, and in course of time dilatation will result. The initial inflammation produces alterations in the superficial myocardium, and the chronic irritation resulting from the constant stress of the traction gradually leads to a fibrous condition of the aneurismal sac. . . . The objection to this theory may be stated as follows: Local pericardial adhesions are common and aneurism is rare, and the myocardium is but little involved in chronic pericarditis. I have never seen any fibrosis from such a cause even remotely resembling the fibrous sac of an aneurism. The pericardium, too, is not a fixed point, and it seems more reasonable to suppose that it and not the heart wall is dragged on by the systole of the ventricle. It is only in rare cases, where mediastinal adhesions fix the pericardial sac to the bony thorax, that such a mechanism seems possible.

I have quoted thus at length because the pathologic findings in my case apparently bear so directly on this point.

The widespread mediastinopericarditis, the firm union of the two layers of the pericardium over the aneurism, and their adhesion to the chest wall, would at first sight seem to furnish an ideal example in support of the theory of origin of aneurism from pericarditis. A more careful study of the case will, I think, show the widespread fibroid changes in the myocardium due to sclerosis and thrombosis of the terminal branches of the coronary arteries. The fact that the obliterated pericardial cavity is clearly recent over all areas except immediately over the aneurism, and the fact that mediastinitis is also more recent than the aneurism, show that pericarditis is at all events not the most important factor in the production of the aneurism.

Scars resulting from traumatism to the heart muscle and from gummata have also been shown to be rarely the cause of these aneurisms.

Most authors state that the conditions may occasionally depend on fatty degeneration independent of myocardial fibrosis. Cowan again thinks that the evidence here is not conclusive. There was no evidence of fatty degeneration present in my sections.

Undoubtedly the great bulk of the cases are due to myocardial fibrosis which results from the complete or partial obliteration of the coronary arteries—which, I think, is the cause in this case.

This explains also the most frequent seat of the lesion, which is in the apical third of the left ventricle, and most frequently here on the anterior surface.

According to Hall's statistics, the site of the aneurism in 112 cases was as follows: Left ventricle, 92 cases; right ventricle, 1 case; left auricle, 2 cases; ventricular septum (muscular part), 8 cases; ventricular septum (membranous part), 7 cases; auricular septum, 2 cases (Hare). This also coincides with the fact pointed out by Huchard that the left coronary artery, the descending branches more especially, is much more frequently abnormal than the right.

The aneurisms vary in size, from the size of an English walnut to the size of a child's head. They are usually single, but may be multiple. The opening into the cavity of the heart is usually large, but it may be small, rendering the aneurism distinctly saccular. The sac contains clotted blood, and the walls are composed of endocardium, myocardium and both layers of the pericardium, which is nearly always densely adherent. It may erode the chest wall, as this one had partially done.

SIGNS AND SYMPTOMS.

There are no distinctive symptoms of cardiac aneurism, although, as Walshe says, almost every known symptom of cardiac disease has been present in these cases. Physical signs are usually equally lacking. It is only when the aneurism is large and favorably located that an antemortem diagnosis is possible. It was the expansile tumor clearly connected with the apex and its heaving character associated with a very weak pulse which enabled us to arrive at a diagnosis in this case. How seldom the diagnosis is made may be seen from the statement of Hall, who says that an antemortem diagnosis was made only once in seventy-six cases.

The signs and symptoms present are almost always due to the associated pathologic conditions, chiefly to chronic myocarditis, which was prominent in this case. These symptoms may, however, be any one of those characteristic of the three clinical groups of myocardial diseases, namely, those in which sudden death may occur without previous indications of heart trouble, those in which there is arrhythmia, cardiac asthenia, etc., and those with general arteriosclerosis and hypertrophy and dilatation of the heart.

ASSOCIATED LESIONS.

This case illustrates so well those cases described by Pick as pericarditis, with pseudo-cirrhosis of the liver and known under a variety of names, such as mediastinopericarditis, multiple or polyserositis, Concato's disease, perivisceritis, etc., that I wish to speak concerning the diagnosis of this feature of this, to me, very interesting case.

These cases of mediastinopericarditis may be divided into three groups clinically: 1. The silent, without signs or symptoms. 2. Those presenting all the features of cardiac disease. 3. Those in which the main features are hepatic.

In this case, while the physical signs of adherent pericardium were not prominent, the evidence of thickened pleura, the fixation of the apex beat and the frequency with which concretic pericardii is known to occur with cardiac aneurism, together with the hypertrophied and dilated heart, the enlarged and tender liver, and especially the marked ascites, out of proportion to the amount of edema present, should have led to the recognition of this condition which was found at autopsy.

TERMINATION.

In rare cases the sac has been obliterated by laminated clots. It is surprising how few of these chronic cases terminate in rupture of sac. Legg found this termination in only 7.7 per cent. of ninety cases. By far the most frequent termination is from cardiac insufficiency from myocarditis, as was the mode of death in this case.

Porter Building.

DISCUSSION.

DR. ROBERT PREBLE, Chicago, (exhibiting a boy with a cardiac aneurism): This patient was shot a few months ago, the bullet entering to the left side of the sternum and at the time giving no special cardiac disturbances. Later the patient developed a characteristic aneurism at the upper and outer portion of the left ventricle.

DR. JAMES B. HERRICK, Chicago: Dr McElroy's paper recalled the case, seen by me five or six years ago, of a colored man, about 30 years old. At autopsy, in addition to some valvular trouble, extensive adhesions and a mediastinopericarditis were found, as well as a chronic fibrous myocarditis. In one of the areas of cardiac softening, near the tip of the left ventricle, a rupture of the myocardium, evidently preceded by an aneurismal dilatation, had occurred; this rupture, instead of occurring directly into the open pericardium, occurred in a weakened spot between the two adherent surfaces of the pericardium that were apparently dissected apart by the blood. This little sac of pericardium had, at the time of death, reached the size of a goose's egg. The interesting clinical feature in this case was that, high up in the epigastrium beneath the xiphoid cartilage, was a visible, palpable, pulsating tumor, and over this could be heard a systolic bruit. The case presented many perplexing clinical features which made the diagnosis somewhat difficult. It was only at autopsy that the real nature of the trouble was learned; then the little sac communicating with the left ventricle was clearly disclosed.

DR. WILLIAM J. BUTLER, Chicago: I had a patient, a boy, 10 years of age, who had primarily a congenital stenosis of the pulmonary arterial tract. He acquired a septic endocarditis involving the pulmonary orifice. In addition to this, which had been diagnosed clinically, there was found at autopsy an aneurism, the size of a walnut, of the right ventricular wall. It had apparently resulted both from an involvement of the mural endocardium and underlying myocardium in the inflammatory changes, more or less fatty degeneration of the myocardium in general and the increased pressure in right ventricle.

DR. JAMES B. MCELROY, Memphis: The diagnosis of these conditions is possible only when the aneurism is favorably located. A most favorable and valuable diagnostic point is the heaving character, the apex-impulse and expansile character, which is only possible when the aneurism is favorably located; then and only then, in my judgment, is a diagnosis possible. In contrast to ninety cases diagnosed postmortem, I have met but one case that was diagnosed antemortem.

CHRONIC PANCREATITIS.*

JOHN B. DEAVER, M.D.
PHILADELPHIA.

Perhaps the most important advances in abdominal surgery of recent years have been those made toward the elimination of digestive disorders, that is, the recognition that by surgery we are able to attack successfully not only the acute and obvious lesions, such as acute appendicitis or intestinal obstruction, but also those dependent on more obscure lesions of the stomach, biliary system and pancreas.

As the importance of the pancreas in the process of digestion was recognized by pathologists long after painstaking investigations had served to bring us to an understanding of gastric and intestinal physiology, so also the surgery of pancreatic conditions has been considerably behind that of the other abdominal viscera.

This is due to a number of reasons. The pancreas is deeply situated and almost inaccessible for direct surgical interference. Its functions being but little understood, their derangements naturally were not recognized, and those finer tests in physiology were as yet unknown.

The work of Fitz brought the attention of the profession to acute pancreatitis, but it was many years later that the chronic form of inflammation of this organ was clinically recognized, even though it had been pathologically studied by many observers.

PATHOLOGY AND ETIOLOGY.

As to pathology, chronic pancreatitis may be subdivided into the interlobular and the interacinar forms. For the purpose of the surgeon it is sufficient to state that the most frequent form is the interlobular, and that it is this form with which we have to deal in the pancreatitis complicating disease of the biliary passages. The interacinar form is due to systemic conditions not yet understood and is therefore correspondingly unfavorable to direct or local attack.

The etiology of chronic pancreatitis is of the utmost importance. There is no doubt that its most frequent cause is some interference with the free discharge of the pancreatic secretion, either associated or unassociated with an ascending infection. As by far the most common cause of such obstruction is the lodgment of a gallstone in the ampulla of Vater, or other part of the common duct, the frequent association of the conditions is at once explained. The occurrence under such circumstances of a pancreatitis, either acute or chronic, is not inevitable, but it is very common. The damming back of the pancreatic secretion with dilatation of the ducts and interference with function is in itself sufficient to cause a chronic inflammation of the gland. Yet in most instances we have no doubt to deal also with an added infection ascending the duct of Wirsung and joining its action to the other cause of inflammation. If the infection be virulent, acute pancreatitis may supervene—if of diminished virulence, we have the chronic form of pancreatitis as a result.

When the duct of Santorini is so situated that it can take the place of the duct of Wirsung, the main duct of the pancreas, as an avenue of discharge, pressure on the duct of Wirsung does not bring about such dire results, yet an infection at the same time active may nullify this action and lead to a pancreatitis even in the absence of a marked stasis in the secreting ducts.

The feature of infection would account for those cases of chronic pancreatitis which we find in those cases of gallstone disease in which the stone does not actually occlude the common duct. The very presence of the stones presupposes an infection of the biliary passages at one time or another, and when this is present there is little doubt that the whole biliary tract is involved. In a certain proportion of these cases the pancreatic duct would, of course, become infected also, and as the infection causing gallstones is known to be a subacute one—by some organism of diminished virulence—we have in the condition causing the gallstones one which also will cause a pancreatitis.

Indeed, most of my cases of chronic pancreatitis have, contrary to the general rule, occurred in patients in whom no gallstones were present. Yet in almost every case I could discern either the presence of an infection as shown by the bile, the congestion and an inflammation of the gall bladder, or the fact that there had been some cholecystitis, as evidenced in a shrunken and distorted gall bladder, or the presence of pericholecystic adhesions.

So while duct obstruction plus infection furnishes the most likely cause of chronic pancreatitis, either factor

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alone is sufficient to cause this condition. The rôle of infection alone is also demonstrable in those cases in which a chronic pancreatitis follows on a long-standing gastroduodenal catarrh. Several cases have come under my notice and have been reported by other surgeons. I have in mind particularly one case in which this was so, and in which the occurrence of the pancreatitis was directly traceable to a chronic gastroenteritis. It is important in these cases to bear in mind the fact that the supposed gastroenteritis thought to precede the pancreatitis may in reality have been its first manifestation instead of its precursor.

Blocking of the pancreatic ducts by calculi in them or by new growths of the common duct or the ampulla of Vater may be mentioned as among the rarer causes of chronic pancreatitis.

In some of my operations I have noted the association of a chronic pancreatitis with cirrhotic conditions of the liver, and in a number of cases which have come to autopsy from the medical wards of the German Hospital the two conditions have existed together.

Many other causes of chronic pancreatitis have been claimed. At the German Hospital it has been found at autopsy in cases of cardiorenal disease, tuberculosis, pernicious anemia, syphilis and other conditions.

There is no doubt that were microscopic examinations made of the pancreas many instances of beginning change would be found in cases where the organ feels and looks entirely normal. It is a well-known fact among surgeons that in quite a few instances in which in life the pancreas is found to be markedly indurated and congested, at autopsy, held some hours after death, the organ presents no macroscopic evidence of disease and is entirely normal to the touch.

The diagnosis of chronic pancreatitis in life was thought some years ago to be impossible, except in those cases in which the metabolism was so greatly disturbed that evidences of this were most markedly shown in both urine and feces. As surgeons have had opportunity of studying the organ on the living subject at operation, we have come to associate certain clinical symptoms with a condition of chronic pancreatic disease, and it may even be asserted that a somewhat definite syndrome has been established. In spite of this, I can not agree with Mayo Robson when he characterizes it as being easy to diagnosticate. At the present time by far the majority of cases are unrecognized except at the operation or necropsy.

SYMPTOMATOLOGY OF THE DISEASE.

In considering the symptomatology we must remember that the symptoms are caused in three ways, and may thus be divided into three groups:

1. Those which depend on the local lesion, i. e., the local manifestations of disease in the upper abdomen.
2. Those which come as a result of the interference with pancreatic secretion, i. e., a form of indigestion.
3. Those depending on interference with the internal secretion of the pancreas—shown principally in the occurrence of diabetes and in the pancreatic reaction in the urine.

1. *Symptoms Depending on a Local Lesion.*—The local symptoms are essentially unimportant as compared to the systemic ones. The patient will at times complain of some epigastric pain, occasionally localized somewhat to either side of the median line. Tenderness in this locality may also be present. The presence of a tumor has been described by some, but I have never been able to satisfy myself of the presence of this sign in chronic pancreatitis.

A general symptom, dependent often on local mechanical interference, is jaundice. We would naturally expect to find this in those cases in which the pancreatitis is associated with gallstone disease, but it occurs also when this is not the case. This in some instances is due to the partial obstruction of the common duct by swelling of the head of the pancreas and would be particularly liable to occur when the duct runs within the substance of the pancreas, as it does in about two-thirds of all cases. Occasionally the jaundice appears to have been a coincidence, i. e., to have been caused by cholangitis resulting from the gastroduodenal catarrh responsible for the onset of the pancreatic lesion.

Mayo Robson has lately offered the suggestion that many instances of catarrhal jaundice, especially of the chronic form, are due to a pancreatic lesion, i. e., that the engorged pancreas by pressure on the choledochus is responsible for the jaundice. This contention he has supported by the report of a number of cases in which the pancreatic disease was discovered by other tests; operation in all cases brought a permanent cure. I am not prepared to admit that all cases of catarrhal jaundice are pancreatic in origin. But the possibility should be borne in mind when we have to deal with forms of the disease which are resistant to the ordinary medical and dietetic treatment.

At times the damming back of the bile will give rise to distention of the gall bladder, which organ may even become palpable. In these instances the symptom is more apt to confuse than to help us, as it would lead us to believe the condition to be primarily biliary. This, however, would not be of such moment, as surgical interference is indicated in either case.

The local signs, as I have stated, are in themselves not significant and gain importance only when associated with other signs of pancreatic trouble. The jaundice, of course, would give us a clue, but as often as not it, as well as the local signs, leads us to suspect disease of the bile ducts or cholelithiasis, when the lesion is in reality pancreatic.

2. *Symptoms Due to Interference with Pancreatic Symptoms.*—The digestive symptoms due to interference with the pancreatic secretion are of the utmost importance. The patients often have anorexia, fulness in the epigastrium and eructations of gas. Associated with these we often have diarrhea of an intermittent or continuous form, in which the stools are large and often gravish in color and contain an excess of free fat.

This combination of such an indigestion with the local signs of a lesion in the upper abdomen should lead us to suspect a pancreatic condition at once.

Occasionally we become aware of the presence of a chronic pancreatitis by an acute exacerbation. Several instances have come to my notice in which this was so, with history about as follows: The patient, previously in fairly good health, was taken ill with symptoms of a lesion in the upper abdomen; pain here was preceded by a chill and followed by marked prostration and cyanosis. These in turn were succeeded by fever with the development of a dulness in the upper left abdomen and lower part of the chest. The Cammidge tests, A and B, were both positive.

It is true that many other portions of the gastrointestinal tract when diseased give us symptoms of indigestion, but each lesion will be found on close study to give rise to a more or less characteristic form. Thus,

in chronic gastric ulcer we have pain after eating, vomiting, hyperacidity and a tendency to constipation. The stools show us no excess of fats and undigested muscle fiber as in pancreatitis, but often give us signs of hemorrhage—such as the occult blood test. The associated epigastric signs are also often more severe, and inflation of the stomach may at times show us a considerable degree of dilatation. Jaundice also is not found.

Chronic gastroenteritis or colitis may give us persistent or intermittent diarrhea. Yet the localizing signs are all to be found in the lower abdominal segment. The stools are often watery and they show us no evidence of impaired digestion of fats.

In chronic appendicitis, constipation and not diarrhea is the rule. The indigestion is usually of a less marked grade than in either pancreatic or gastric lesions and does not exercise such a deteriorating effect on the patient's health in general. Then again we often find a history of acute attacks of appendicitis, or else of chronic soreness and tenderness in the right iliac fossa. The stools also show nothing characteristic.

The emaciation and weakening which the indigestion of pancreatic disease brings with it is insidious in onset, but in late cases most marked and intractable and furnishes another symptom, if it may be so called. But when the disease has progressed to this stage the diagnosis as a rule interests us more as a curiosity preceding autopsy than as an indication for treatment.

In spite of the apparent distinctness of the symptomatology of chronic pancreatitis, its differentiation is not always easy. Its onset is often most insidious, and one or another point in the symptom-complex is not present. Jaundice may not occur; the local signs may be practically absent. The examination of the feces is at times inconclusive and often demands skill in examination not easy to obtain.

Then again, in those cases in which the pancreatitis is associated with gallstone disease, the latter in almost all cases overshadows the often more dangerous pancreatic condition. And so well known are the symptoms of disease of the gall ducts compared to those of the pancreas that physicians are prone to consider the symptoms of a chronic pancreatitis as being the aberrant ones of cholelithiasis, even when the distinction is comparatively plain.

3. *Symptoms Due to Interference with the Internal Secretion.*—The third group of symptoms—those depending on disorders of metabolism, due to interference with the internal secretion of the pancreas—are really the most distinctive of all and give us the most definite basis for a diagnosis of pancreatic disease.

Diabetes has been long recognized as being often associated with pancreatic disease. Unfortunately, when this condition has supervened, the pancreatic lesion is often too far advanced for any marked improvement by any method of treatment, either medical or surgical. In some cases it must be remembered that the glycosuria is not due to a true diabetes resulting from interference with the internal secretion of the pancreas, but is due to the absence in the alimentary canal of its secreted ferments, and in some instances may be a pure alimentary glycosuria associated with pancreatic disease. It may be noted here that the interacinar form of chronic pancreatitis, affecting as it does the islands of Langerhans earlier than the interlobular form, is more apt to give us an early and intractable diabetes.

The reaction discovered by Mr. Cammidge I believe to be an aid in the diagnosis of pancreatic disease. It is true that the originator and his collaborators have been able to get more positive results from its use than others, but it has been found of value in many cases. I am inclined to regard it for the present, in the hands of most investigators and laboratory workers at least, as a fairly constant sign of pancreatic disease, rather than of great value in the differential diagnosis.

It will be seen, then, that the majority of cases of chronic pancreatitis, either associated or unassociated with gallstone disease, may be diagnosed with a fair amount of certainty if sufficient care be taken. They are cases in which the history must be most carefully taken and the patient's memory for details at times taxed to the utmost. In conjunction with this the study of the urine and feces should be undertaken by one who is an expert. The results in this line of work by the unpracticed are more likely to be misleading and confusing than of any real aid to the diagnostician.

TREATMENT.

Granted, then, that the diagnosis of chronic pancreatitis has been made, or that chronic pancreatitis is discovered on the operating table, what should be our line of treatment?

It can not be denied that the efforts to benefit patients suffering from chronic pancreatitis by the use of pancreatic extracts, derivatives or substitutes have been futile in all but a few instances. In these the results have at times been remarkable, but the treatment is, as a rule, irksome, especially when a strict diet must be followed. Not only this, but as no effort is really made to restore the pancreas itself to function, its action by its internal secretion is lost, and in spite of the substitution of its ferments metabolic disturbances generally increase.

Medical treatment also is entirely unable to really reach and remove the cause of the pancreatic lesion—to give the pancreas a chance to functionate again the normal way. Surgery in many of these instances will enable us to attain a radical cure. It does this in two ways:

1. By removing the underlying cause of the pancreatitis when this is to be found in an obstructed choledochus.

2. By enabling us to overcome the infection in the biliary and pancreatic ducts.

When the pancreatitis is secondary to gallstone disease, as is the case in so many instances, removal of the calculi, together with free drainage of the bile ducts, in most cases leads to a complete subsidence of pancreatic symptoms. The obstruction being removed, the pancreatic ducts have an opportunity of again emptying themselves and the irritating bile is no longer forced into them by back-flow. The coexisting infection of the biliary passages is cured or rendered harmless by the drainage instituted at the time of operation, and thus the pancreas is enabled to take its place as the main factor in the whole cycle of digestion. The benefit to the chronic pancreatitis in many cases of gallstone disease doubtless accounts for the wonderful restoration to complete health of those patients who are found to be weakened and emaciated to a degree not explainable by the mere biliary condition.

When the gall ducts are found clear, and the infection which has given rise to the chronic pancreatitis has subsided, drainage of the organ by way of the biliary passages nevertheless exerts a remarkable curative effect on the lesion. This is especially true when the pan-

creatic condition is diagnosed and the patient operated on while it is in its incipiency, before the so-called catarrhal pancreatitis has really become a chronic interstitial interacinar lesion.

The choice of operation in dealing with chronic pancreatitis resolves itself into a decision between simple drainage of the biliary ducts or a cholecystenterostomy. I have used both methods, and each has its advantages in special cases. When gallstones are found in conjunction with pancreatic disease, or when the latter is found during a gallstone operation, I consider the drainage indicated by the biliary condition to be sufficient. Thus, if we have stones in the choledochus, a choledochostomy should be performed in the usual manner. The operation of cholecystostomy is to be preferred when we find a pancreatitis the result of a still active infection of the bile ducts or when the pancreatitis is discovered in its incipient or catarrhal stage.

Cholecystenterostomy is indicated when the pancreatic condition is well advanced and we wish to procure permanent drainage. This operation is not my choice when much biliary infection is present, as I always prefer surface drainage when marked infection is manifest. This operation also I consider to be more grave than ordinary cholecystostomy, and I have found it to be attended by a higher mortality in my own operative work. Especially does this become true when we are dealing with a gall bladder not well suited for the procedure.

The indications for surgical interference in chronic pancreatitis I consider to be found in the diagnosis itself, unless some circumstance prohibits it. Thus, I would not operate in the presence of marked organic disease of other organs, nor would I be prone to advise operation in patients who are *in extremis*.

Moderate anemia and glycosuria are not contraindications to operation in pancreatic cases, as both are often greatly benefited when the metabolism of the body is restored to its normal status. My results in chronic pancreatitis have been such as to encourage me to further operative work in this direction. The immediate mortality is still quite high, due in large part to the extremely weakened condition of the patients, the grave associated conditions, and especially the tendency in those patients in whom we find both jaundice and a pancreatic lesion, to uncontrollable hemorrhage.

The details of the operative technic are not matters of extreme difficulty, and improvement in results must come from earlier diagnosis. In gallstone cases the patients should be operated on before chronic pancreatitis supervenes, and other cases of pancreatitis unassociated with lesions of the biliary passages should be recognized sooner than they now are.

PANCREATITIS IN ITS RELATION TO GALLSTONE DISEASE.*

WILLIAM D. HAGGARD.

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The pancreas is the most sequestered organ in the body and has only recently yielded up, in part, the secrets of its incorrigible inflammations. The clinical knowledge of its pathology has been obtained in operations on the gall tracts. Its natural history has been unraveled and, while in the past its recognition has been uncertain, it can now be identified during life in a considerable number of instances, both in its acute and chronic form. It is important in all operations on the upper abdomen that the surgeon should examine with detailed care the head of the pancreas, not only to determine the existence of pathologic changes, when present, but also to appreciate the "feel" of the normal gland. The fact that the Mayos found the pancreas to be involved in 6 per cent. of all the operations on the gall tracts is sufficient indication of its importance, as well as of the causal relation between gallstones and diseases of this neighboring gland. They further found 81 per cent. of pancreatic diseases to be the result of, or coincident with, gallstones. Egdahl regards biliary lithiasis the most frequent single cause. Osler says that forty-five out of one hundred and five cases were associated with gallstones. Robson found pancreatic implication in 60 per cent. of cases in which gallstones were in the common duct. Out of 118 cases Quénu and Duval in 46 cases found stones in the gall bladder or cystic duct; in 20 cases in the common duct; in 8 cases in the ampulla of Vater; in 2 cases in the duodenum, near the ampulla; in 28 cases in the entire tract; in 10 cases undetermined, and in 3 cases in the stools. Mayo observed pancreatitis to be four times as frequent when the stones are in the ducts as when they exist in the gall bladder (18.6 to 4.45). The head of the gland is involved seven times as often as the entire gland (124 to 17). Nearly two-thirds of common ducts are surrounded by the head of the pancreas, which, if swollen, causes obstructive jaundice. In the other one-third an independent opening of the duct of Santorini may act as a safety valve.

Opie discovered the rôle which a small (pea-sized) stone lodging in the ampulla of Vater plays in converting the common and pancreatic ducts into a through channel, allowing bile to be injected directly into the pancreas and thus produce the acute type of infective and hemorrhagic pancreatitis.

Robson has established on an indefensible basis the relationship of gallstones in the common duct and chronic interstitial pancreatitis. It is probable that stones simply render the organ more vulnerable to bacterial invasion.

Flexner asserts that modified bile, with diminished salts and increase in colloid, sets up chronic pancreatitis. Fresh and unaltered bile gaining entrance to the pancreas begets acute changes. If an impacted gallstone does not cause bile to enter the pancreas direct, simple obstruction and retention of the pancreatic secretions, if infected, will cause inflammation.

Desjardins thinks that micro-organisms find their way through the duct of Santorini into the Wirsungian duct and back into the duodenum, thus causing infection in the "triangle of inflammation" when there is obstruction. This could not occur in one-third of the cases for in 21 per cent. the duct of Santorini is impervious and in 10 per cent. it does not communicate with the duct of Wirsung.

Regurgitation of fatty materials from the duodenum into the duct where it had been dilated from the previous passage of a gallstone has been suggested by Hess as a causative factor.

Robson operated in fifty-two cases of the chronic interstitial type which were due to gallstones and in forty-six cases in which there were no gallstones. Of this latter group it has been said that gastrointestinal disor-

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty ninth Annual Session, held at Chicago, June, 1908.

ders caused about 30 per cent., of which one-half are in alcoholics. Among other causes which have been mentioned are typhoid fever, pyemia, malaria, mumps, appendicitis, trauma, embolism, gastric or duodenal ulcer.

The acute type is so sudden and severe in its onset, attended with such agonizing pain and followed by such extreme prostration that it has been denominated "the pancreatic drama." The pulse is rapid with rise of temperature. Vomiting occurs at once and is persistent. First, the stomach contents are regurgitated, and then the intestinal, simulating acute obstruction, although gas is passed. The lips are livid, the extremities cold, the entire body of a cyanotic leaden hue. Dyspnea is often present and constant splitting backache has been observed (Erdman). The pain is excruciating, paroxysmal and deep seated and is uncontrollable with ordinary doses of morphia. Collapse is extreme. Tenderness is diffuse, and the whole picture is that of "the acute abdomen." There is some epigastric induration in the first twenty-four hours, but the consecutive distention soon obliterates it. There is no glycosuria. Erdman and Thayer found no sugar in five cases each. Patients die in collapse in forty-eight to seventy-two hours. This type occurs oftenest at about the age of 50, in fleshy subjects addicted to alcohol.

Acute peritonitis from perforation of viscera is closely simulated. The actual diagnosis is very inexact. Of fifty cases, twelve were diagnosed as perforating gastric ulcer; twelve as intestinal obstruction; four as acute peritonitis; two as appendicitis; two as cholecystitis; one as strangulated hernia; one as angina pectoris; in eleven no diagnosis was made and in the remaining five the diagnosis of pancreatitis was correctly assumed. Fortunately the operative indication is equally imperative in most of the conditions which appear to be in evidence. Owing to the extreme fatality the operation is urgently demanded. Ebner says that out of ninety-six patients 90 per cent. who were not operated on died, and of those operated on 52.8 per cent. survived. Körte saved six patients with fat necrosis.

The laboratory examinations of the urine and feces are so laborious and consume so much precious time in the acute cases and are really so inconclusive that it does not seem wise to delay exploration to have them made.

The distinctive tissue change is fat necrosis. It results (when there is obstruction) from penetration, into the tissues adjacent, of pancreatic juice and certain ferments, which split the fat into its component fatty acid and glycerin. The latter is absorbed and the former unites with the lime-salts to form yellowish-white nonelevated opaque spots about the size of a millet-seed that look like droplets of candle grease. Fat necrosis points as unerringly to the pancreas as jaundice does to the liver. There is also marked exudation. The colon and omentum are gorged with fluid. In the omentum there have been observed clumps as large as sausages (Brugsch and König).

In the subacute or suppurative form the onset is less sudden and severe. Chill, fever and leucocytosis are present and an epigastric tumor gradually develops. Although constipation is the rule, fatty stools and occasionally fragments of necrotic tissue may appear. A less violent course is pursued, sometimes ending in resolution. These cases frequently terminate in suppuration, which burrows in a bizarre way. Operation is not so immediately necessary in the subacute cases unless suppuration demands evacuation.

Chronic pancreatitis occurs in individuals with previous painful epigastric attacks which often declare their gallstone origin. There is midline tenderness, slight fulness, pain referred to the left side, to the kidney and left scapular region. There is extreme loss of weight which, with the pigmentation of the skin, frequently gives rise to the inference of malignant disease. Jaundice is commonly present and may exist for many months. Nearly all cases of so-called catarrhal jaundice are in reality pancreatic catarrh or actual chronic pancreatitis. The intense irritation of the skin in jaundice is indicative of pancreatic and not biliary origin. The common duct is surrounded in the lower third of its course by the head of the pancreas in 62 per cent., which when swollen produces obstructive jaundice. In 38 per cent. the duct runs behind the pancreas and, although it might be enlarged, no pressure jaundice will result.

Uncomplicated gallstones are most easily identified by their early history. Typical attacks, without jaundice, then attacks followed by jaundice and attended with ague-like symptoms with no tumor, betoken the lodgment of stone in the choledochus. In chronic pancreatitis induration is often made out, and the tenderness is central rather than under the right arch. Gallstones that do not encroach on the common duct do not give the pancreatic urinary reaction of Cammidge and the feces are alkaline. In pancreatitis the motions contain large quantities of undigested food and are greasy because of the unsaponified fat. They are light in color and bulky.

In chronic pancreatitis Schmidt's bag test is said to show the nuclei undigested in the meat fibers of a small cube which is sewn in a silk bag that is taken into the stomach and recovered from the stool.

In many instances the head of the pancreas has felt like cancer at the time of operation and has been so diagnosed, but the patients have really been cured by removal of the stones and drainage, showing the induration to have been an interstitial thickening of the pancreas. Still it is quite possible in many instances to detect the late cases of cancer without operation. The condition lacks the acute onset, pain and fever. The gall bladder rapidly becomes distended. The feces quickly turn white. There is hematemesis and melena and, lastly, the enlargement of the cervical glands, ascites and edema.

Degenerative changes in the pancreas may destroy its control of the metabolism of carbohydrates and produce diabetes. It rarely occurs in the interlobular form of pancreatitis, but almost uniformly in the interacinar form when the greater part of the gland is replaced by scar tissue which crowds out the cell-islets of Langerhans.

Sugar was found by Cammidge in 6 per cent. of Robson's sixty-five cases of common duct stone.

While diabetes is not a common result of gallstone pancreatitis, it may happen that delayed operation will permit an ordinary interlobular type to advance into the interacinar form with its tell-tale glycosuria.

The operative indication for the acute cases is unmistakable. Incision of the acutely inflamed pancreas with drainage often suffices. The peritoneum should also be drained when there is that peculiar beef-broth serum present. If the patient's condition permits the complicating gallstones should be rapidly removed and drainage instituted.

In the chronic cases drainage of the bile passages, while indirect, is most effective. It is an anomalous illustration of a palliative operation being also a curative

one. A thorough search with finger and probe after the removal of the obvious stones is essential to insure none being left. It is especially difficult to detect them in the pancreatic portion of the duct. The common duct is best drained temporarily with a catheter introduced up to the junction. Permanent drainage is to be established by cholecystenterostomy if there are no gallstones. Sidney Phillips observed a disagreeable diarrhea when the gall bladder was attached to the colon, but in two instances I have seen no unpleasant symptoms. The duodenum, instead of the colon, is undoubtedly more desirable, as it delivers the bile into its natural channel where it is physiologically needed.

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DISCUSSION

ON PAPERS OF DRS. DEAVER AND HAGGARD.

DR. ARTHUR DEAN BEVAN, Chicago: In the development of this new surgery of the pancreas, members of this Association have played the most active part. I refer to the memorable work on pancreatic cysts by the late Nicholas Senn; the splendid work on acute pancreatitis by Fitz, and the pathology of the pancreas by Opie.

In connection with injuries of the pancreas, two things have impressed me as being of great importance. First, the diagnosis can not, as a rule, be made without an exploratory laparotomy, which is best made under gas anesthesia. Second, we must provide for most thorough drainage and also for thorough protection of the abdominal wall against the digestive action of the pancreatic juice. The latter, I think, is best done by oxid of zinc paste.

In acute pancreatitis the diagnosis, although difficult, is by no means impossible. In a general way those cases which have a clinical picture midway between ileus and perforation, with a definite line of tenderness in the pancreatic region, and some swelling, are very suggestive of acute pancreatitis; but the diagnosis must be made by exploratory operation under gas anesthesia. It is not always necessary to interfere in these cases. In three of my cases the operation was purely exploratory. A definite diagnosis of acute pancreatitis was made. There was no definite swelling nor any evidence of suppuration in the region of the pancreas; no gallstones to remove, and I simply made the operations exploratory, with immediate closure of the wounds, and all three patients went on to recovery. On the other hand, where there are gallstones they should be removed, and if there is swelling and evidence of hemorrhage and suppuration, drainage should be instituted.

A most interesting group of cases are those in which it is impossible to differentiate between carcinoma and chronic interstitial pancreatitis. I think that here the rule should be to take the optimistic side. Three times in one winter I made the brilliant diagnosis in my service at the Presbyterian Hospital, after exploratory operation, of carcinoma of the pancreas and very gravely told the relatives of the diagnosis. We sent the patients home to die. Those three patients went on to perfect and complete recovery after cholecystenterostomy. That has been a most instructive thing to me, and now I take the optimistic side in these cases and do a cholecystenterostomy with the hope that the case may be one of chronic interstitial pancreatitis and not carcinoma.

DR. CARL BECK, Chicago: The coincidence of pancreatitis and gallstones is by no means rare or exceptional. The numerous reports of the coexistence of these two pathologic conditions, the large number of experiments on animals, and the clinical observations prove the truth of these two statements. The reason why of late we understand a little more about these conditions is that we now make our diagnosis of pathologic conditions at the operating table and not at the postmortem. The erroneous views of former times were due to the examination of this organ postmortem. The tissues of no other organs undergo such rapid changes as do those of the gall bladder and pancreas. The diagnosis of diseases of the pancreas is difficult, and we hailed the Cammidge test with enthusiasm as a great help; but there is only one means of making a definite diagnosis, and that is by exploratory operation.

At the present time the position of the surgeon relative to this question of pancreatitis and cholelithiasis can be summed up in four points: First, knowing the great danger of acute pancreatitis, leading to abscess or fat necrosis, every time acute pancreatitis is suspected an exploration must be made, even during the attack. The dangers of hemorrhage and perforation are insignificant compared with the danger of acute pancreatitis. Second, in all cases of gall-bladder operation an examination of the pancreatic field should be made, and if a threatening abscess or necrosis is found, this part should be drained through the foramen of Winslow or gastrohepatic omentum backward, according to the nature of the case and the findings. Third, in all cases of acute pancreatitis and fat necrosis the gall tracts must be examined carefully for stone on acount of the common existence of gallstones with pancreatitis. Fourth, there are no other means at present of saving the patient's life except thorough drainage forward toward the abdominal wall and backward.

DR. WILLIAM L. RODMAN, Philadelphia: It has been made very clear to us in these admirable papers that it is practically impossible by the clinical symptoms and signs always to diagnose diseases of the stomach, and that even after a laparotomy it is not always possible to differentiate between benign and malignant disease. We have all accepted these conclusions so far as the stomach is concerned, and we have practically agreed in view of this difficulty of making a diagnosis between the several affections of the stomach that it is better to err on the safe side in our practice, and do a more radical procedure when it can be done without materially increasing the risk. It seems that what is true of the stomach and gall bladder and ducts is just as true, and in a way truer, of the pancreas. I thoroughly agree that it is simply impossible to diagnose at all times either acute, subacute or chronic pancreatitis. In one case after exploring the pancreas and being positively certain that I was dealing with malignant disease of the stomach, I closed the abdomen, after establishing drainage of the gall bladder, and found a tumor the size of a fist at the head of the pancreas. The patient's jaundice soon passed away; he rapidly gained in weight, and now, three years after the operation, is perfectly well.

Chronic pancreatitis is a more common disease than we have thought it was hitherto. In the great number of operations that are being done at the present time on the gall bladder and ducts, we should take care lest too radical surgery be done in the way of removing the gall bladder, unless it is absolutely necessary, because the only successful way of treating chronic pancreatitis is by drainage. If cholecystectomy be done where cholecystotomy would have answered all indications, and the patient subsequently develops marked pancreatitis, what is to be done? Of course, we can, as Robson does, drain the common duct, which acts as a gall bladder, but this is a far more radical procedure than draining the gall bladder itself. Therefore, it seems to me that the lesson to be drawn from these papers and discussions is that we should practice more conservative treatment of the gall bladder in doubtful or borderline cases that come to us. Dr. Deaver has drawn particular attention to the fact that the two conditions are often associated and that they can not be differentiated. This is just what we ought to understand, when we reflect on the anatomy of the pancreas, and the fact that these stones often coexist in the pancreas and the gall ducts. A stone in the common duct will cause retrojection of bile into the pancreatic duct or the duct of Wirsung, and pancreatitis may follow. In a recent case of acute pancreatitis the symptoms markedly simulated those of acute intestinal obstruction.

DR. WILLIAM H. WATHEN, Louisville, Ky.: It is almost impossible to make a positive diagnosis of acute pancreatitis and differentiate it from some disease of the right hypochondriac region. Until we have made an exploration we may resort to an analysis of the urine and not find pancreatic disease. We may find pancreatic disease where there is a reasonably good digestion of the products of food by these secretions, but we

do know from what we have learned that the symptoms are sufficiently significant in every case to indicate an exploration; that by this exploration we can, as a rule, make a sufficiently accurate diagnosis to enable us to recognize these cases, and that the treatment is nearly always complete drainage. The practice of removing these structures is now rapidly becoming obsolete. Drainage and the removal of any obstruction in the duct are indicated. Hence the failure to make a perfect diagnosis of disease of one of these structures is not of much importance, provided that we know that the exploration is necessary, and that we institute the proper treatment.

DR. JOHN B. DEAVER, Philadelphia: Doctors must study their cases of indigestion more thoroughly. They must not be satisfied with diet and drugs in many of these cases. I called attention particularly to the class of acute pancreatitis, and especially the acute exacerbations occurring in the presence of chronic pancreatitis in which no drug is doing more harm than morphin given indiscriminately. Too many doctors when called to see a patient with pain in the abdomen are apt to resort too quickly to the hypodermic syringe. A physician might as well give his patient hydrocyanic acid. A prominent citizen of Philadelphia recently died of pancreatitis because he had morphin shoveled into him. That is the harmful effect of morphin.

DR. W. D. HAGGARD, Nashville, Tenn.: One of the diagnostic symptoms of acute pancreatitis is that you can hardly give enough morphin to stop the vomiting, backache and pain. It is one condition in which morphin does not absolutely mask the symptoms. I urge the withholding of the drug and the wisdom and importance of operating early in most acute abdominal cases. When the abdomen is opened and fat necrosis is found, it will invariably point to the presence of pancreatitis.

MAY NOT DRINKING WATER, WHEN POLLUTED WITH SEWAGE, BE ONE MEDIUM OF DISSEMINATION OF THE TUBERCLE BACILLUS?

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The tubercle bacillus may be introduced into the animal economy in various ways. The usual portals of entry are the mouth, nose, or an abraded surface. In cows it may obtain entrance through a milk duct or by way of the vagina. That it sometimes enters the fetus *in utero* through the medium of the circulation must be admitted, notwithstanding the opinion of many physicians to the contrary. Veterinarians tell us that it is not uncommon for cows to drop infected calves. This, of course, is entirely apart from a so-called inherited predisposition to tuberculosis, which may be either physiologic, consisting of such a condition of the tissues, and more especially of the mucous membranes, as will afford a receptive and favorable environment for the growth of the organism; or anatomic, depending on a conformation of the thorax, such as the deformities known as chicken-breast, winged chest or hollow chest, which interfere with the full and healthy development of the lungs. It may, of course, be introduced artificially by inoculation, as demonstrated on the lower animals. When it enters by the mouth and nose, it may as dust pass directly into the air passages and lungs, or, being detained in the mouth, be swallowed with the saliva and so reach the digestive tract. Contained in food or drink, it may pass directly into the stomach and intestines.

It has been definitely proved that it may penetrate the healthy mucous membrane of the intestinal tube, pass into the lymphatic circulation without leaving the slightest lesion or trace of its passage, find its way into the thoracic duct, so into the general circulation and finally into the lungs. Therefore, its presence in the lung, coincident with its absence in the intestinal wall, does not all prove that it was not originally introduced in food or drink.

The early tuberculous affections of infancy, meningitis and tabes mesenterica, are generally due to the use of infected milk or to artificial feeding.

These considerations prepare us for the question whether, in view of the thousands of human beings who are expectorating tuberculous matter and depositing it with their urine and feces, great numbers of these bacilli must not find their way into our streams and constitute a source of pollution of our drinking water in many instances.

This inquiry is particularly pertinent in regard to the opportunity for dairy cattle to become infected themselves and to convey the infection to their milk if they drink from streams close to the source of pollution. Any one who has watched cattle drinking in a stream can readily understand how this might occur. Even when they do not wade in to a sufficient depth to immerse their teats and udders, in their efforts to drive away flies they throw the water dripping from their mouths and from the ends of their tails over their sides and udders. From the stream they usually go direct to the milking. With the carelessness which prevails on the average farm the milker finds no difficulty in mixing the milk which is distributed over the outside of the teats with any organic filth which may be clinging to them, as well as to his own hands, and allowing it, so contaminated, to drop into the milk pail.

EXPERIMENTS TO ASCERTAIN THE PRESENCE OF TUBERCLE BACILLI IN SEWAGE.

In order to remove this hypothesis of the possible contamination of water supplies from the realm of mere theory and place it on a substantial basis, I have been conducting a series of experiments, with the cooperation of Dr. Herbert Fox, chief of the laboratories of the State Department of Health to determine whether tubercle bacilli may be found in sewage, and, if so, to what extent. The pollution of water supplies by the excreta of typhoid fever, of dysentery, of cholera and of diarrhea, has been so evident and of such constant occurrence that it has filled our field of vision to the exclusion of the possibilities of such pollution by the poisons of other diseases. Tuberculosis is one which has been thus overlooked. I know of no investigations made or published in order to determine the facts in this matter up to the present time.

So far my researches have been limited to the examination of the sewage from the Rush Hospital for Consumption and Allied Diseases, West Philadelphia, the sewage from the White Haven Sanatorium for Consumptives, and the mixed sewage from the sewer outlet at South Street Bridge, West Philadelphia.

The sewage from the main outlet into the sewer from the Rush Hospital, taken November 24, was largely fluid, containing some solid fecal matter, and what was apparently refuse from the kitchen.

The sample was well shaken, the solid portions broken up with a rod and portions of 1, 2.5, 5 and 10 and 20 c.c. pipetted into centrifuge tubes, the first four being made equal to the bulk of the last one, with sterile water. These tubes were centrifuged for eleven hours, with one

intermission to remove supernatant liquid and add fresh sterile water to them. After centrifugalization the solid sediment was spread on glass slides, using the entire 1 c.c. at the bottom of each tube. These slides were stained with Ziehl-Nielson carbol fuchsin for five minutes; one set was decolorized and counterstained with a saturated solution of methylene blue in absolute alcohol, and another was first decolorized with a 25 per cent. solution of sulphuric acid in absolute alcohol and counterstained with Loeffler's, while a third was decolorized and counterstained by Pappenheim's solution. This last method was used to corroborate the findings of one set of Rush Hospital sewage samples and those from White Haven. In every instance that tubercle bacilli were found in smears decolorized by the 25 per cent. sulphuric acid in absolute alcohol, they were also found on preparations treated with the Pappenheim solution. This method is declared a final tinctorial test by Pappenheim,[1] Simon[2] and Rosenberger (as yet unpublished). Every slide was subjected to the search of an hour under a one-twelfth oil immersion Zeiss with No. 6 compensation ocular. The following counts are given on the methods in which the slides are decolorized by the sulphuric acid alcohol method, because of the clearness of the field.

One undoubted tubercle bacillus was found on the slide containing the sediment of 1 c.c.; 2.5 c.c. showed three tubercle bacilli; 5 c.c. showed seven; 10 c.c. showed ten, and tubercle bacilli were found to be present in the centrifuged portion of 20 c.c., but their number was not counted. All these figures represent the search of one hour with a mechanical stage.

On December 17 another sample was taken at the same place. In this sample the result was practically the same as that above outlined. The number of organisms demonstrable in the slides made by identical methods was found to decrease appreciably when the sewage was kept under artificial conditions, that is, in large dark bottles in the icebox.

	Weeks elapsed.			
	0.	1 week.	2 weeks.	4 weeks.
No. of organisms in 1 c.c.....	1	1	0	0
No. of organisms in 5 c.c.....	6	3	1	1
No. of organisms in 10 c.c.....	8	+	2	1
No. of organisms in 20 c.c. (Average 3 counts).....	+	6	2	2

Samples were taken Jan. 4, 1907, of the sewage from the bactericidal filter-plant of the White Haven Sanatorium for Consumptives. Portions were taken from the mixed sewage, from the solid sediment after filtration, and from the effluent. The samples were given exactly the same treatment outlined for the sewage at the Rush Hospital, and equal volumes taken. The counts by the sulphuric acid alcohol method and the preparations decolorized and counterstained by the Pappenheim solution are practically identical. The counts are given according to the sulphuric acid alcohol method for the reason above mentioned.

In the stained sediment from 1 c.c. and 5 c.c. of the mixed sewage no tubercle bacilli were found, but they were found sparsely when the sediment of 10 c.c. was stained. This sediment stained so diffusely with methylene blue that it was practically impossible to see all fields clearly and some may have been overlooked. The solid sediment was removed from one of the chambers eighteen inches below the surface, as far down as was possible to reach. It was a dark, foul-smelling mass, about the consistency of feces and not dry as far down as could be seen. The mass was macerated with an equal quantity of sterile water, well mixed with the rod and portions centrifuged. The sediment of 1 c.c. of this mixture showed two tubercle bacilli after an hour's search. The effluent from this filter plant was taken directly into the bottle as it bubbled out of the ground about 200 feet down hill from the separation chamber. It was a turbid fluid and showed a bacterial count of 370,000. Typical acid-fast bacilli could be demonstrated in quantities of 10 c.c. after the search of one-half hour. They were in clumps and not easily enumerated. The sediment of smaller quantities failed to show any such organisms.

The sewage from the Schuylkill river was taken at the mouth of the sewer below South Street bridge, West Philadelphia. One hundred cubic centimeters were centrifugalized for twelve hours, the sediment thoroughly mixed from the several centrifuge tubes, recentrifugalized and dried in the hot air oven, softened with normal salt solution, again centrifuged, the supernatant liquid poured off, dried again in the hot-air oven, softened with salt solution and spread on four glass slides for staining purposes. The reason for these several washings was the presence of a scum or coating over the sediment when dried after the first centrifugalization No organisms in any way comparable to the *Bacillus tuberculosis* could be found. In preparations decolorized by 5 per cent. hydrochloric acid no acid-fast organisms were found; this was done to see if the smegma bacillus was present in the sewage. There were no masses of dejecta, but the fluid had a distinct fecal odor.

The experimental efforts at producing tuberculosis in guinea-pigs have been omitted up to this point because they can be treated together, their results being uniformly negative. The sediment in the several instances directly after centrifugation was subjected to temperatures of 60, 65 and 70 C. for fifteen, seven and two minutes, respectively, with the hopes of killing off the sewage organisms, particularly the spore-formers, without doing any damage to the tubercle bacilli. Guinea-pigs inoculated with this heated sediment either succumbed shortly after the inoculation or, when they survived this, failed to show any pathologic lesion of tuberculosis. In order to have the organisms in their vegetative state sediment from a large amount of sewage was incubated at 35 C. for twenty hours, centrifuged for a few minutes and this sediment subjected to heat as above outlined. The second centrifugalization was only done long enough (about twenty minutes) to throw down a sufficient sediment with which to work, a complete sedimentation requiring time sufficient to permit further spore formation. The results of inoculation into guinea-pigs were also negative. In smears made from some of the injection material the typical acid-fast organisms were found, but they could not be discovered in smears made from the peritoneum or organs of pigs dying shortly after injection.

This does not prove that the acid-fast bacilli were not tubercle bacilli. The discovery by stain of tubercle bacilli in sewage does not prove that they were viable. When taken direct from the sewer of the Rush Hospital and White Haven Sanatorium it is assumable that they still live when so recently from the human body. The fact that no tuberculosis was produced does not militate against our assumption of the identity of these acid-fast organisms because of the few that were introduced,

1. Berl. klin. Wchnschr., 1898, No. 37.
2. Clinical Diagnosis, 1904.

inasmuch as we were obliged to use small quantities of the sediment to lessen the action of the accompanying germs which we could not kill or remove. Attempts at cultivation with pieces of organs and coagulated blood serum were, of course, failures.

EXPERIMENTAL WORK ON THE VIABILITY OF TUBERCLE BACILLI AND SEWAGE ORGANISMS.

At the outset of this work some hope was placed on the effect of sunlight on the sewage organisms. Later eosin with its well-known bactericidal activity was added to our means of removing the contaminating bacteria. Early in our experimentation the effect of sunlight on tubercle bacilli smeared and dried on filter paper was determined. Direct sunlight on these papers was sufficient to kill the tubercle bacilli in twelve minutes (April, 1907). The bacteria-bearing strips were exposed in open Petri dishes and then transferred to tubes of glycerin veal agar on which the stock was growing well at that time. In July and October, 1907, experiments on the effect of sunlight and eosin on the surface growths in flasks were made. The experiment was set as follows: One set of flasks was kept as control and one was used as control and exposed to the sunlight; to one set of flasks was added 0.03 per cent. eosin solution and on the surface of the third set a 2 per cent. eosin in gelatin was smeared in as thin a film as possible. While I am aware that this procedure is not satisfactory to determine the lethal sunlight exposure, it was hoped that some assistance might be given toward determining what would happen to tubercle bacilli in a thin layer of emulsified sewage sediment exposed in these flasks. The possibility of error in this technic is manifest. It is striking, however, that the transplants from the sets which were exposed in flasks smeared on the outside with eosin did not grow after one hour exposure, although the two tests were made when the sun's power is quite different—July and October.

EFFECT OF SUNLIGHT AND EOSIN ON SURFACE GROWTHS.

	Control.	½ hr.	1 hr.	2 hrs.	4 hrs.	8 hrs.
August 19:						
Control dark	+	+	..	..	..	..
Control without eosin	+	+	—	+	+	+?
Eosin in solution 0.03 %	+	+	+	+	+	—
Eosin smeared on surface	+	+	—	—	—	—
October 19:						
Control dark	+	..	..	..	..	..
Control without eosin	+	+	+	+	+	—
Eosin in solution 0.03 %	+	+	+	+	—	—
Eosin smeared on surface	+	+	—	—	—	—

It appears from this that the photodynamic power of eosin is effective after half an hour, or an hour at least, on tubercle bacilli. It restrains growth after transplantation, at any rate.

In making a control experiment with sewage a fresh positive Rush Hospital sewage was rapidly centrifugalized and the sediment allowed to germinate twenty hours in 90 per cent. by bulk of bouillon. This was again rapidly centrifugalized and a thick emulsion of the sediment placed in our usual tubercle bacilli flasks to the depth of about two millimeters. These were placed in lots like the last experiment, one set as control, one received 0.03 per cent. eosin and the third had a gelatin coating of eosin. The results of their growth after direct sun exposure on a very bright day (although Dec. 14, 1907) require no chart. Transplants made with a loop and with the extreme point of a straight needle, touching only the surface, gave marked positive growth of contaminating organisms after four hours.

The results of exposing dried sewage on filter paper as was done with the tubercle bacilli was likewise disappointing. The germinated sewage was rapidly sedimented and this mass ground up to a state approaching perfect homogeneity. It was then distributed by a pipette in equal quantities on slips of filter paper which were placed in a vacuum desiccator without acid for ten minutes, at the lapse of which they were still a little damp. The exposure to the sun was made in two minutes after removal from the desiccator, the time elapsing from removal from the incubator to the sun exposure being about forty minutes. The slips were then exposed directly to the sun for one, two, five, ten, thirty and sixty minutes and transplanted to neutral bouillon. Every exposure grew well.

It is evident from these few sunlight and eosin tests that longer exposure is required to kill the sewage organisms than would suffice to restrain growth of the tubercle bacilli, and that this technic is therefore impracticable.

We are dealing with such a small number of organisms in this sewage compared to the number usually employed to produce artificial lesions that some means must be found to render sewage organisms entirely innocuous, which means must be such that will not harm the tubercle bacillus itself. Dr. Fox and I are still working on this problem, but can not as yet report much progress. The finding of tubercle bacilli in smears made from sedimented sewage of tuberculosis hospitals by eminently trustworthy methods, is sufficient proof to us that these organisms are present in such sewage and may therefore be in the watercourses into which the sewage flows.

SOME PRACTICAL CONSIDERATIONS IN THE TREATMENT OF INFLAMMATION.*

JAMES EDWARD POWER, D.M.D.

PROVIDENCE, R. I.

To treat intelligently any and all of the pathologic conditions which may present themselves in the oral cavity the practitioner, whether he be a physician or dentist, must understand the underlying process which is productive of these conditions, namely, inflammation.

Inflammation has been defined so many times that it is now a difficult matter to select a definition that will be accepted by all. Perhaps one of the best definitions is the one propounded by Grawitz, wherein he says that "inflammation is the reaction of irritated and damaged tissues which still retain vitality." The reaction referred to by Grawitz includes a number of successive changes, commencing with stimulation or irritation and ending with suppuration or pus formation. In conjunction with, and as a result of, the process just referred to, we have a manifestation of four other important conditions, dolor, rubor, calor, tumor—pain, redness, heat and swelling.

THE INFLAMMATORY PROCESS.

By way of preface, I shall briefly describe the changes which take place in the living tissue as a result of inflammation, because it is on this that I shall base my reasons for the treatment of the conditions to which I shall refer later. Sutton compares the local systemic conditions of inflammation to a conflict of living men, instead of living cells, and it is worth repeating here,

* Read in the Section on Stomatology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

as it may explain many of the numerous changes which take place and which cause heat, redness, pain and swelling.

The leucocytes are the defending army, the vessels its lines of communication, the leucocytes being, in effect, the standing army maintained by every composite organism. When this body is invaded by bacteria or other irritants, information of the invasion is telegraphed by means of the vasomotor nerves, and leucocytes are pushed to the front, reinforcements being rapidly furnished so that the standing army of white blood corpuscles may be increased to thirty or forty times the normal number. In this conflict, cells die, and often are eaten by their companions. Frequently the slaughter is so great that the tissues become burdened by the dead bodies of the soldiers in the form of pus, the activity of the cells being proven by the fact that their protoplasm often contains bacilli in various stages of destruction. These dead cells, like the corpses of soldiers who fall in battle, later become hurtful to the organism which during their lives it was their duty to protect, for they are fertile sources of septicemia and pyemia.

The other symptoms, which are known as the cardinal symptoms, may be clearly explained by the following example: We will compare the blood vessels to flexible rubber tubes. Under normal conditions, the system provides for the passage of a certain quantity of blood through these tubes or blood vessels. Now, if anything, whether of a chemical or a physical nature, is introduced into any part of the body, and can interfere with or destroy the natural harmony of the part, the system will try to expel it, because it is a foreign body, and as long as it is present it will act as an irritant. The first changes which take place in the tissues, as a result of this irritant, cause a swelling of the tissues in which the blood vessels are imbedded, thus subjecting the elastic sides of the blood vessels to pressure and reducing their caliber. The same quantity of blood must then pass through the arteries as would pass through under normal conditions. We have present, therefore, this condition: Blood rushing through the vessels at an increased rate of speed on account of their diminished caliber. The rushing of blood against the sides of the vessels causes friction. Stimulation of the dilators of the vasomotor nervous system follows, allowing a greater amount of blood to rush to the capillaries and to redden the surface of the part. Heat also is generated from the friction produced by this rush of blood against the sides of the vessels; this general disturbance produces stimulation of the nerve terminals, and causes pain. All the symptoms are now accounted for, except impairment or loss of function. This last step I shall pass, as we can readily see that it is made possible only by the presence of these other symptoms which I have tried to describe.

In approaching all cases of inflammation, the first step in progressive treatment is the removal of the cause. This, I am sure, is accepted by all as the proper step to pursue, regardless of what part may be involved. Yet members of both the medical and dental profession, whose acts we must perhaps attribute to carelessness, are constantly making exception to this rule, and it is for this reason that I desire to present to this body some of the conditions and cases which are constantly coming under my observation.

First, we will consider the treatment of abcessed teeth, a pathologic process which I believe is miscalled more often than any other condition which I can recall at this time. How many times do we hear the intelligent but thoughtless practitioner refer to them as ulcerated teeth, and this by men who, if requested to define abcess and ulcer, would promptly reply that an abcess is a circumscribed cavity filled with pus, and that an ulcer is an open granulating sore. Now, if an ulcer is an open granulating sore, how can a tooth become ulcerated?

PATHOLOGY OF ABSCESS FORMATION

In order to build a foundation on which to base my future remarks, I shall briefly describe what takes place both in the tooth and in the surrounding tissues during the formation of an abscess. The commencement is in the involvement of the pulp. This may be effected by a blow from some external force, from the leverage brought about by careless extraction, or from improper treatment of irregularities of the teeth. Any of these forces will cause undue pressure on the vessels entering the apical foramen of the tooth; a strangulation of the vessels then takes place, the nourishment of the pulp is suspended and its vitality destroyed.

The same condition may also be caused by the direct pressure of a filling placed against the pulp, by the direct action of micro-organisms on the pulp by virtue of a carious condition of the tooth, or by the indirect action of thermal changes passing through a metallic filling which has been used to restore a carious tooth, or, again, by the action of arsenic or other drugs sometimes contained in filling material. Whether or not the cause is direct or indirect, physical or chemical, the same pathologic phenomena will first manifest themselves in the pulp of the tooth.

When the blood supply is interrupted or cut off, the pulp ceases to be nourished and a degeneration takes place. All the progressive steps of inflammation which I have described will occur in the pulp and, if not interrupted, will terminate in the formation of pus. The tooth becomes a foreign body and the system tries to expel it. The lodgment of the tooth in its bony socket prevents the accomplishment of this end and we have two opposing forces: First, the system trying to expel the tooth, and, second, the position of the tooth in the jaws preventing this expulsion. Thus we have present irritation, the first step of inflammation. Then what happens?

The inflammatory processes repeat themselves in the tissues outside the tooth substance, and the system partially accomplishes its end by loosening the tooth. All abscessed teeth will become loose some time during the process which I am describing. A breaking down of the surrounding tissues follows, with the formation of more pus in the tissues adjacent to the diseased tooth. Finally the pus will manifest itself by burrowing in the line of least resistance, through these tissues to the outer surface, often breaking through the face and making an ugly wound. Or, by infection, the inflammatory processes will repeat themselves in the bony substances, causing necrosis, which often endangers the life of the individual as in the case which I shall describe. One thing is certain, that as soon as any tooth becomes a foreign body from any cause, Nature never does and never will submit to its presence. The action of the system in trying to expel foreign bodies is many times beautifully illustrated in the cases where needles broken in the tissues of the fingers will present themselves later in the tissues of the arm.

THE FALLACY OF WAITING.

Now, if the removal of the cause is the first progressive step in the treatment of inflammatory conditions,

why do men persist in advising patients not to have abscessed teeth extracted until the swelling of the face subsides, and in supplementing this advice by stating that the extraction of the tooth would be a very dangerous procedure? Would these same men advise noninterference with a gangrenous appendix until the swelling of the abdomen had subsided? Would they recommend leaving a piece of steel in the eye, a piece of glass in the foot, or a splinter in the hand until the swelling of these parts had subsided? If they would not so advise, why do they do so in cases where a tooth is involved? If they do recommend postponing the extraction, I believe that I am justified in saying to them that they do not act on the fundamental principles of pathology, and that, therefore, they should not assume that responsibility which is associated with the treatment of disease which many times involves a life. Of course, I do not recommend the extraction of all abscessed teeth, because many times the skilled dentist, by proper treatment, may prolong their period of usefulness for many years. What I do maintain, however, is that if the tooth is condemned the swelling of the face or other conditions should not interfere with its removal, and the sooner it is extracted the better.

In the treatment of inflammation we may be required to employ external applications. Shall we advise the application of heat or cold? Judging by my own experience, in both hospital and private practice, I believe I have seen more damage result from the application of hot poultices to the face than from any other one cause which I can remember. Here, again, I am forced to conclude that the practitioner who advises the application of heat in the first stages of inflammation for the purpose of aborting the abscess formation is not giving to his patient the proper treatment, and also that his advice does conflict with tried and true theory and practice in the treatment of inflammatory conditions.

I stated in the earlier part of this paper that, besides the removal of the cause, the removal of any of the cardinal symptoms would be a progressive step in the treatment. I believe that every condition which presents itself in inflammation is dependent on the preceding ones. In the early stages heat seems to be one of the predominating features. I apply ice, therefore, to remove this condition by keeping the parts cool through vasoconstriction, believing that I am limiting, if not entirely checking, the progressive action of the factors producing heat. I am describing the treatment I would recommend in the incipient stages of inflammation before the abscess had formed.

I can not understand why practitioners apply hot poultices to prevent a condition which is not only made possible by heat, but is greatly aggravated thereby. Heat is one of the cardinal symptoms, one of the conditions we wish to eliminate on account of the important function which it performs in accomplishing that which we are trying to prevent, yet even in view of this fact I heard two of our most reputable men make the statement last winter that they would apply ice only in cases where pus was present, and would apply heat in all other cases. Basing the treatment on my conception of what inflammation really means, I will say that I am satisfied to use ice in all cases, except where pus has formed, or where the inflammatory process has so far progressed as to make certain formation of pus and hence render impossible the abortion of an abscess. If pus has already formed, then I resort to the knife rather than to poultices, prefering a clear incision to a ragged wound which is always made by pus forcing its way through the tissues and finally leaving an ugly scar.

AN ILLUSTRATIVE CASE.

The following case will show what often may be and many times is the result of the treatment which I am condemning: I was called to see a child 5 years of age who was suffering from an abscessed temporary tooth. He had been taken to a dentist for advice some days previous. The dentist told the child's parents that to extract the tooth would be a very dangerous procedure. The tooth was not extracted and the pain and swelling increased from day to day. The mother finally took the child to a physician for advice. He confirmed the advice already given by the dentist, but supplemented it by telling her to apply hot flaxseed poultices to the child's face. In forty-eight hours the poultices accomplished their end and caused an irreparable injury. The tissues became distorted and the pus finally forced itself through.

The physician continued to treat the child during the next five weeks, at the end of which time the whole of the left superior maxilla and a portion of the malar bone were involved by necrosis. I was then asked to see the patient and found him in the condition just described. Pressure on the face anywhere below the line of the eyes would cause a large quantity of thick pus to flow from the break in the tissues under the eye, also from the nose and from the mouth. I advised an immediate operation, first explaining to the mother the possibilities of such a step in so serious a case.

Two operations were performed on the child; the first consisted in removing a large part of the superior maxilla from the lateral tooth back to the tuberosity of the superior maxilla. This section did not extend to the center of the hard palate. The method employed consisted in placing my finger between the teeth and cheek, holding the cheek out of the way while I dissected the cheek from the bone in such a manner that I could pass my finger up by the side of the jaw through the opening under the eye. By so doing I was able to simplify the operation as well as getting a continuous passage. Irrigation also was made more thorough, and the small particles of necrotic bone which have the power of re-infecting the parts operated on were washed away. At the end of four weeks a second operation was performed, which consisted in the removal of a portion of the malar bone.

To prevent the opening which existed under the eye from closing from the outer surface I placed powder in it. The secretion from the eye mixing with the powder formed a hard mass. The motion of the tissues against this hard mass produced irritation, which was causing more inflammation. Finally, after experimenting with several antiseptic powders, I found one on which water had little if any effect. Every morning I broke the adhesions on the outer surface which had formed during the night and filled the depressed raw cavity with this powder. After a few days granulation began to take place in the cavity and the wound closed from the bottom. Restoration of the contour was the result instead of the unsightly depression and distortion of the eyelid, which would have been present if the wound had been allowed to close from without inward. The restoration of the contour of the cheek, when the patient was discharged, was due to the tissues becoming cartilaginous and filling the space formerly occupied by the bone.

Every step in this operation was carried out inside the mouth. I always avoid making incisions in the external surface of the face if it is possible so to do. If, however, we are obliged to make an external incision it is better to make it through one of the natural wrinkles of the face, for then, as shown here, it will at least be partly concealed. Following the second operation the case progressed favorably for five or six days. Then pus began to form again and was working back toward the ear. You can readily understand the dangers and complications which might arise if the pus reached the temporomaxillary articulation. So I made a small incision a little farther back on the external surface of the cheek near the ramus of the jaw, of which no trace was left.

THE KIND OF INCISION.

Some writers express the belief that in order to evacuate the contents of an abscess it is necessary to make the incision the entire length of the abscess. In those cases in which the incision is made within the oral cavity the length of the incision is not important. But when (even if seldom) the incision is to be made externally, our attention should be directed to the cosmetic effect which our treatment will have. Under such circumstances a large incision is unnecessary. I usually make the incision of sufficient depth to reach the pus but as short as possible, seldom making it longer than the blade of the knife, and in a number of instances much shorter, always using gauze to keep it open.

I have seen many operators after opening an abscess exert pressure on it for the purpose of expelling the pus. I believe that this part of the treatment is not necessary. It causes a great amount of unnecessary pain and may, by bruising the already pathologic tissues, be productive of more inflammation, with a probable absorption of the pus into the circulation because of this pressure. The dangers which may result from such practice are so broad that I hesitate even to define their boundaries. Pressure should not be made on the sides of the abscess after it has been incised. The natural tendency of the tissues to resume their normal condition will, by their own contraction, without external interference, accomplish everything that is desired, with less pain and with better results.

HYPODERMIC INJECTIONS.

As there are many cases in which the improper use of the hypodermic syringe has caused much trouble, perhaps it is within the scope of this paper to direct attention to a few of the reasons why this trouble occurs so often. It seems hardly necessary in this age to refer to the importance of sterilized instruments, but on account of some errors which have been caused by ignorance and indifference on the part of the operator it may be useful in considering this problem of hypodermic medication to refer briefly to the need of asepsis.

First, we should use an anesthetic with whose ingredients we are thoroughly familiar. Second, we must be sure that the instruments which we are about to use are sterilized. In my practice, even though I am sure that the instruments, especially the hypodermic syringe, are surgically clean, I always pass the needle through a Bunsen flame. This will destroy any microorganisms that may come in contact with the needle between the time of sterilization and the time at which I use it. I always use an all-metal removable piston syringe for this purpose, removing the piston and filling the barrel through the top rather than drawing the fluid through the needle point. I have seen operators, even within the past year, inject a local anesthetic into the gum after first filling the barrel by introducing the needle point into the vessel containing the anesthetic and drawing the latter through the needle into the barrel. Subsequently they have injected the fluid into the gum tissue, refilling the syringe by repeating the process just described. It is easy to understand that if the needle point which is sterilized is introduced into the diseased tissues and then into the bottle of anesthetic, the anesthetic will be contaminated. The next patient, regardless of how much care may have been exercised in sterilizing, will have injected into his tissues a solution containing micro-organisms which can and may destroy not only the vitality of the part but perhaps his life as well.

GIVE THE SOLUTION TIME TO ACT.

Why is there such a variation in the results which are obtained by the different men who have used local anesthetics in performing minor surgical operations, such as the extraction of teeth, etc.? It would seem that many times the operator does not allow sufficient time to elapse for the anesthetic to accomplish its end. In his anxiety to extract the tooth, before the effects of the anesthetic pass away, he really extracts the tooth without anesthesia. After the injection of the anesthetizing fluid it is best to wait from thirty seconds to a minute, sometimes even a longer period, before commencing to operate.

In a majority of cases in which we resort to local anesthesia the parts are already in a highly inflammatory condition. Again, the first step in the treatment should be, if possible, the removal of the cause. In the case where a tooth is the cause we should exercise much care in introducing the anesthetic into the tissues because in treating one condition we may start an equally serious one. The technic is perhaps the most important step in the whole procedure, not only from the viewpoint of making the injection of the anesthetic effective, as well as the extraction of the tooth painless, but from the more important point of avoiding a future condition which is not only more troublesome to treat, but which has associated with it a greater danger than accompanies the condition which we are now treating.

Before injecting the anesthetic wash the whole mouth by syringing it with warm water which contains a portion of any of the many mouth washes. The selection of this must be left to the judgment of the operator. Next wash the surface of the tissue into which the hypodermic needle is to be introduced with 70 per cent. alcohol. In this way we have prepared the field of operation and have reduced, so far as we can, the danger of forcing more bacteria into the already diseased tissues.

THE TECHNIC OF INJECTION.

The needle is inserted into the gum tissue at a right angle to the tooth. Before exerting any pressure on the piston withdraw the needle a short distance, but not, of course, entirely out of the tissues. This will leave a space between the end of the canal which the hypodermic needle has made by its first insertion and the needle in its new position. Next, when we press the piston, the pressure which would ordinarily be exerted on the tissues if this space did not exist is reduced and the pain is slight. I press the piston as lightly as I can at first in order to give the anesthetic an opportunity to

become diffused before forcing it into the tissues. Then I gradually increase the pressure on the piston, and the tissues assume a whitish appearance in the form of a circle in the area of the needle.

In many cases this process must be repeated before anesthesia is complete. In such cases I reintroduce the needle in the manner described, always placing the needle within the whitened circular area, no matter how many injections are required. If I can keep introducing the needle into this whitened area, which by virtue of the pressure and the anesthetic becomes larger each time, the only acute pain which is experienced by the patient is that from the first introduction of the needle.

I do not try to inject the anesthetic around the end of the root of the tooth, first because I find that the results are just as good without doing so, and I avoid also another danger. I treated some patients in whom the operator had introduced the needle into the tissues parallel with the abcessed tooth, aiming to get the anesthetic as near the abscess as possible, and then forcing it into the tissues under high pressure. If we reflect for a moment on the condition of the tissues in the region of the abscessed tooth we will readily see that they are all stretched and distorted and their tonicity, which would under normal conditions be present, is destroyed. We must bear in mind that the pus which is contained in the abscess sac is only prevented from commencing a pyemic or septicemic career by a thin membrane which may be easily broken.

Now, if the operator places his needle so that the anesthetizing fluid can be forced into the already overfilled abscess sac, the sac may be broken by the pressure of the anesthetic forcing its way into it. If this does happen, there is a probability of the micro-organisms which fill this sac entering the circulation and producing a septicemia. The condition just described is one in which the abscess is completely formed, but the same principles which are involved in this case are involved in every case from the commencement of the formation of an abscess to its completion, and the dangers which I have tried to describe are in proportion to the stage of the disease which we are treating.

I have purposely avoided reference to the minor details on the subject of inflammation because I am recording the practical experience for the busy practitioner, the exigencies of whose life compel him to get at the facts quickly.

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INTERSTITIAL GINGIVITIS.*

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While the term "Riggs' Disease" conveys a pretty definite meaning to the profession and to a majority of the laity, many of the profession have felt that it was not a term of sufficient scientific import and rather tended to emphasize the poverty of nomenclature in the dental department of medicine.

This led to the search for a more scientific name, and "pyorrhea alveolaris" became almost universal. This term, being descriptive of but one of many symptoms, failed to satisfy most of the students of this disease, and it remained for Talbot to point out that in all cases there was an underlying inflammation of the connective tissue of the gingiva and to suggest the name of "interstitial gingivitis."

CAUSE.

The cause of interstitial gingivitis is still a question of dispute, although many theories have been put forward, some, if not all, of utmost plausibility. The truth of the matter probably is that the causes are many, or rather, that many are the conditions in the economy which give rise to the disturbances in the nervous and circulatory system producing the breaking down of the tissues about the roots of the teeth.

That it is a local expression of systemic disorder seems to me the best solution, and this is the opinion reached by many of our best observers. The opponents of this theory argue that as the disease does not exist where there are no teeth, it is, therefore, a purely local disease. This seems to me a specious argument, which if carried out to the fullest extent would admit the existence of few if any diseases of general or systemic origin when the result of that disease expresses itself in definite localities. Take, for instance, gangrene of a toe: Would the absence of that toe and, therefore, of disease in that member preclude the possibility of the organic malady which tends to gangrene?

By many observers a connection has apparently been traced between interstitial gingivitis and rheumatism; this is in turn refuted by those who find cases in which no rheumatism can be traced. It is my belief that both are but expressions of metabolic disorganization.

Various other constitutional diseases, such as renal, heart and liver disturbances, have been charged with the paternity of interstitial gingivitis. Each disease has in individual cases been apparently proved guilty, but the very failure at other times to find the result and the alleged cause associated seems to prove that back of them all is a common cause.

In the attempt to find such cause it may be well to see if it is possible to trace a condition precedent to these diseases and common to them all.

Goldthwaite, in his investigations of rheumatism, finds more than a coincidence in the presence of pus as an antecedent in many cases of rheumatism. Elimination of pus from the frontal sinus, antrum, tonsils and alveolar regions has given great relief in his cases.

Many grave renal diseases, while causing untold misery from the fact that the disorganized kidneys can not eliminate toxic and irritating products of metamorphosis, are, according to one authority, caused by irritation from products of faulty metabolism, due to imperfect or improper digestion in the alimentary canal.

Talbot, writing on autointoxication, says that interstitial gingivitis is found in full sway in Bright's disease, diabetes, rheumatism, gout, asthma, nervous disorders, etc., before these diseases have become of sufficient importance to be observed by the physician.

Fletcher, the advocate of thorough mastication, who holds the distinction of having created a new word in our vocabulary, namely, "to Fletcherize," maintains that if his precepts are followed and perfect digestion thereby produced, muscular pain or soreness can not occur. Muscles may become fatigued and refuse to act, but the sensations of cramp or lameness which most people feel after prolonged or unusual exertion exist only in those cases where there has been either improper digestion or faulty elimination or both.

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* Read in the Section on Stomatology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

The conclusion, therefore, seems to follow that the ultimate cause of interstitial gingivitis is the common cause of many chronic organic diseases, that is, toxins in the intestinal canal, whether they be poisons absorbed from some external source or thrown off as a result of physiologic chemical action on food good in nutritive quality but wrong in quantity or improperly prepared for the alimentary canal.

Cause and effect: What a problem it is to prove which is which! If interstitial gingivitis occurs about a malposed tooth, is it simply because the tooth is there and because its position harbors the disease? Or has the malposition led to improper mastication, faulty metabolism and the breaking down of interstitial tissue at a weak spot?

Does the deposit of calcareous substance on the teeth cause interstitial gingivitis? Or has a weak and flabby mastication produced autointoxication, permitted the deposits to form, and thus presented a nidus for the interstitial inflammation?

It is my belief that the first cause lies in the intestinal tract and that given perfect conditions there will be no interstitial gingivitis. Mark the words, "perfect conditions"—the various and often comparatively slight causes which contribute to imperfect conditions will be touched on in the section of the paper devoted to treatment.

Intestinal putrefaction produces indican in the urine, and as indican will always be found in excess in cases of pus formation, it seems logical to charge the indican in the tissues with being largely responsible for the condition which leads to the breaking down into pus.

As causes of intestinal putrefaction Fossume cites the following:

1. Improper mastication, resulting in gastritis with lessened hydrochloric acid.
2. Gastritis, the lessened hydrochloric acid stimulating pancreatic secretions. In such cases delayed digestion carries the peptones too far down the tract to be absorbed and the coli communis changes it to indol, skatol, etc.
3. Excess of sugar, due to catarrh following fermentation and accompanied by much mucus so that digestion is delayed by (a) impoverished juices and (b) mechanical obstruction caused by presence of too much mucus.
4. Excess of proteids, with normal digestion.
5. Too much fat in food, mechanically interfering with absorption, though the digestion and the quantity of proteids are normal.
6. Slow digestion, with normal quantity of proteids.
7. Lack of bile, thus favoring putrefaction, as bile is strongly antiseptic.
8. Weak muscular action of the intestines.

Talbot lays great stress on autointoxication as a cause of this disease and has pretty conclusively shown that the uric acid habit is not a cause of interstitial gingivitis, but, like interstitial gingivitis, is only an expression of disturbed nutrition.

As has been said, observers have always shown a tendency to connect interstitial gingivitis with other systemic diseases—diseases whose origin is generally conceded to be due to faulty metabolism. Hence we find one man attributing the disease to rheumatism, another to gout, another to diabetes, etc., ignoring the fact that all these diseases have a first cause, which is faulty metabolism, and that, given the first cause, interstitial gingivitis becomes established, even in very young children (as scurvy) before the other diseases are diagnosed.

The treatment may be divided into, first, preventive and, second, curative, and each subdivided into local and systemic.

PREVENTIVE TREATMENT.

Local.—Inasmuch as it has been shown that the blood vessels of the gingiva become choked with the products of metabolism, it becomes an absolute necessity that the circulation should be assisted in every way possible.

Hence the advantage is seen of massage, of mildly stimulating mouth washes and, above all, of the stimulation resulting from the hand-polishing system for which Smith is the sponsor.

The patient should be instructed in the use of the tooth brush, it being a well-known fact among careful observers that many who brush their teeth faithfully many times a day never really clean them.

Inflammation of the mucous membrane, due to malocclusion or impaction, calls for the necessary correction, as such irritation easily becomes the starting point of interstitial gingivitis. This, perforce, leads to much regulating of the teeth, which was formerly neglected when there was no visible deformity, and to regulating at a much earlier age, since interstitial gingivitis, given the necessary condition for development, is no respecter of age.

And this again leads to the subject of Fletcherizing, or the thorough and proper use of the teeth. Without their proper physiologic and anatomic use, all organs and members of the body tend to waste away or become a prey to disease, and the teeth are no exception. It, therefore, becomes evident that even a perfect set of teeth perfectly cared for can not be maintained in perfect health without perfect use.

No stomatologist fulfils his mission who, thorough though he may be in his technical care of the oral cavity, fails to hammer into the mind of his patient the paramount necessity of the thorough use of the teeth in mastication.

Systemic.—I fancy that any one who has followed me thus far recognizes that I at least believe that the starting point of interstitial gingivitis lies in the alimentary canal and that faulty metabolism, whether due to imperfect digestion and assimilation of true foods or to the ingestion of substances not properly classed as foods, such as alcohol, makes for a condition of the interstitial tissue which lends itself easily to inflammation.

As Talbot has reminded us, the blood vessels in the alveolar process can not readily expand to the pressure of the blood, and if that blood be charged with toxins, then with high pressure and sluggish circulation the breaking down into inflammation becomes easy. Thus physicians are brought face to face with the importance—yes, the necessity—of teaching temperance to their patients. Overeating and overdrinking are bound to fill the system with ptomains and ptomains largely of the toxic variety, and perhaps the worst thing about overdrinking is that it leads to overeating.

It should not be imagined that the small eater is necessarily not an overeater. He often eats some special kind of food to excess, as witness the sailors on long voyages who eat salt pork (and often not heartily) and become affected with scurvy (interstitial gingivitis).

Infants improperly or scantily fed have scurvy; and sometimes with plenty of variety at hand a man, through some perversion of taste, persists in eating

some particular kind of food which the system can not properly eliminate. Tea, coffee, alcohol and tobacco all have their charm, and almost every adult is a devotee of one or more of these stimulants. They are not foods; in fact, each to a greater or less degree, according to its use or abuse, becomes a factor in upsetting the physiologic balance. The patient, then, must be taught that if he dance he must pay the piper. At the age of 30, when the anatomic structure is complete, there is not the demand for tissue building that there was in youth. All material not necessary for the repair of the natural wear and tear of the machine consequently becomes a clog in the system and interferes with the circulation. I have found that two meals a day are amply sufficient for a fairly strenuous life the last twenty years. Again I call attention to Fletcher and the tests of his endurance as made at Yale. Youths should eat proper food properly, and adults should refrain from overeating and eating in ruts. Though the diet may be simple, yet its simplicity should contain a variety. If there must be a cereal every morning, it should be varied from one day to another—not a difficult matter in these days of so-called "breakfast foods." And so with any article of food, constant and continued repetition should be avoided.

CURATIVE TREATMENT.

Systemic.—For the patient presenting himself with a well-established case of interstitial gingivitis it is necessary to pursue an active and somewhat drastic course, both systematically and locally. The systemic treatment will be considered first.

To clean out the intestine I prefer to use podophyllin in centigram doses, giving two at night, followed by a saline on arising; then, to purify the intestinal canal, an intestinal antiseptic tablet made up of the sulphocarbolates of zinc, lime and soda, one at noon, another at night. The podophyllin is repeated the second night and the rest of the treatment the next day, and so on until the physician is reasonably satisfied that the bowel has been thoroughly scoured and purified. This should be followed up with phosphate of soda, 60 centigrams, *t. i. d.* for an indefinite period, or until the local treatment is finished and the patient put on the general preventive treatment.

If there is much soreness of the gingiva or dark red spots, tender on pressure, indicative of a gouty tendency, salicylic acid or aspirin, 30 centigrams, *t. i. d.*, will often act magically. In obstinate cases it is well to try iodid of potassium, 30 centigrams, *t. i. d.*, not only because the presence of iodin in the system acts most kindly in all cases of inflammation of mucous membrane, but also because the physician can never be entirely sure that a specific taint is not complicating the case. The usefulness of iodin in mucous inflammation, and also the fact that interstitial gingivitis may often be the first indication of arteriosclerosis, make hydriodic acid a timely remedy in such cases.

Calcium sulphid, an old remedy for sterilizing the system and checking the formation of pus, has of late received renewed attention from practitioners who have found it possible to get a pure preparation. It seems to be a clinical fact that saturation of the system with calcium sulphid, about gm. 20 to gm. 30 in twenty-four hours, will check the formation of pus in both alveolar abscess and in interstitial gingivitis. From my own observation and practice I am convinced of its efficacy.

The opsonic index has been taken in this disease. Treatment in accordance has been given a trial and favorable results reported.

The patient should be commanded to chew his food thoroughly, eating only what he can so chew.

The diet should be regulated, correcting the patient's tendency to take certain foods to excess and adding to his diet wholesome foods which he has eschewed owing to dislike or a fancied belief that they disagree with him. If the patient is over 30 the amount of flesh food ingested should be limited and the use of underdone meats discouraged. Almost invariably, on inquiry, it will be found that patients with interstitial gingivitis drink but little water. The deleterious effect of this habit in cases of interstitial gingivitis is too obvious to need further elucidation to the professional mind, but it is a condition too often overlooked. Six to eight glasses of water a day is little enough, yet few are they who drink as much. Obvious also is the importance of fresh air, exercise and deep breathing; yet these simple means for the establishment of good circulation are too often slighted or, because so obvious to the professional mind, their value is left for the patient to discover for himself.

To him the observance of these hygienic rules means simply an increase of his appetite, the indulgence of which in nine cases out of ten is just what should be avoided. It is elimination which should be sought, not further ingestion.

Old age, Metchnikoff says, is caused by the putrefaction of food in the colon. Measures to arrest or prevent this putrefaction tend to prolong life. He recommends lactic acid ferment and suggests buttermilk as a simple form of treatment.

Based on his suggestions, there are now on the market tablets of lactic acid ferment which, it is asserted, produce a clean, sweet colon and hence freedom from arteriosclerosis. I have been trying the effect of these with apparently good results. Patients will be found with well-marked interstitial gingivitis whose diet seems most correct. The patient may avow that he has a perfect stool with daily regularity, but on close questioning will admit that the stools are foul. It is in such cases that Fletcherism is demanded, for it should be remembered that Fletcher maintains that his method produces a stool absolutely free from odor. As a matter of fact these patients admit in nine cases out of ten that they bolt their food.

While realizing the importance of the practice of thorough mastication in these patients, it is well to remember the excellent temporary effects of intestinal antiseptics. Various writers have called attention to indications for treatment of the alimentary canal from observations of the condition of the tongue; for instance, a broad, thick, pallid tongue calls for alkaline treatment, both locally and systemically, and a pinched, dry, red tongue is evidence of need of acid treatment.

Local.—While the treatment up to this point has called for the keen attention and skill of the stomatologist, it is now that he has the final word and here that his skill and faith in his works bring about the real cure. For with interstitial gingivitis once established nothing will avail without the most thorough, persistent and intelligent local treatment.

Riggs, who wrote on this disease and to whom all honor is due (although I do shrink at giving the unscientific name of Riggs' disease to interstitial gingivitis), laid the greatest stress on the necessity of thoroughly scaling the teeth. Younger, who has done more

for the cause than any other living man, has hammered at this point most insistently. He says that the teeth must be scaled and that if to scale one tooth properly takes all of a long sitting the time must be so occupied and the one tooth done most thoroughly. He, as well as Riggs, has given the profession a set of scalers of great value to the operator. There are many others, notably Harlan, who have emphasized the importance of thorough scaling and devised instruments to facilitate the removal of deposits. I only wish to say that they have not put the matter forcefully enough. Those who have had experience in transplanting and replanting teeth know that a tooth should not only be clean and free from tartar, but that it must be smooth and polished. Many of the scalers of finest temper and cleverest design fail to leave the tooth in this condition and, therefore, they fail. The set of instruments invented by C. M. Carr do not scrape or draw-shave the teeth but plane them. When the tooth has been thoroughly planed by these instruments it is as smooth as glass. The varying lengths of operating shafts, curves, angles, etc., in devising which Carr has shown his genius, make it possible to reach every part of all teeth and their roots. He naturally emphasizes the importance of the perfect smoothness and cleanliness of the roots. In individual cases he can probably make his position good. His error is in considering the matter closed at that point and in not going deeper into cause and prevention. To sum up the instrumentation or operative treatment in interstitial gingivitis I do not hesitate to state that if with the teeth *in situ* the operator can produce the same freedom from deposits and the same polish that he could with the tooth in his hand and a cuttlefish disk in his engine, then he may be sure of curing for the time being any case of interstitial gingivitis. It is for the progressive operator to find the ways and means for doing this.

For the comfort of the patient and to enable the operator to work with deep and sure effect, it is almost a necessity to inject an anesthetic. Following are two good prescriptions for local anesthesia:

R.	gm. or c.c.		
Eucain hydrochloridi (B.)	1	30	gr. xx
Chloretone	1	or	gr. xvss
Fluidextracti hamamelidis, ad	120		ɱ̄iv

M. et sig.: For hypodermic use.

R.	gm. or c.c.		
Cocainæ hydrochloridi		90	gr. xiv
Chloretone	1	or	gr. xvss
Fluidextracti hamamelidis, ad	120		ɱ̄iv

M. et sig.: For hypodermic use.

The eucain solution is for those who dread cocain or where the operator fears its effects, the cocain being perhaps surer in its anesthetic effect.

It is for the operator always to remember that if for any reason he can not perfect the smoothness of the tooth *in situ*, it remains for him to extract, polish and replant. While the concensus of experience shows that such teeth are apt to become subject to absorption and come out after about seven years, yet I have cases of perfect teeth after a lapse of twelve years since replantation. It is impossible to place too much emphasis on the importance of the fixation of the teeth after such an operation, and also of teeth (not replanted) that have been loosened by the disease. Splints for this purpose are designed for temporary or permanent use, according to the necessity of the case.

It is now over ten years since I first made the assertion that, in proportion as teeth afflicted with interstitial gingivitis are in serious condition, in just that proportion is the removal of the pulp a necessary preliminary treatment.

Time and experience have only emphasized the conviction, and it is advised that the pulp be surgically removed where the disease has involved the root for at least half its length. In the majority of such cases the pulp will be found in an irritable condition, conducive to pulp stones or exostosis, and in the case of multiple roots one or more are often found with the pulp dead. The removal of the pulp by pressure anesthesia, as previously described by me,[1] is easy and simple.

Remedies and medicines in treatment must now be considered. The cleansed pocket needs something to stimulate the soft tissues to new granulation and to contract and heal around the root. Lactic acid in 50 per cent. solution is excellent and deserves trial. Aromatic sulphuric acid should always be in mind, especially if the disease has gone far and involved the alveolar process. They both promote the throwing off of any diseased bone tissues. I have found a mixture of carbolic acid and caustic potash, in equal parts, of greatest benefit in destroying soft tissue that is not granulating well or where there are exuberant granulations.

Iodin or compounds of iodin, as iodid of zinc or iodid of silver, have a most beneficial effect, the compounds especially adding to the well-known beneficial action of iodin the astringent and antiseptic effect of the metals. At this stage of the treatment also trichloracetic and monochloracetic acids are useful. If the disease has not gone deep enough to warrant the removal of the pulp and yet exposes dentine that is very sensitive, nitrate of silver for the posterior and chlorid of zinc for the anterior teeth have their well-known uses. Adrenalin and chlorid of aluminum are excellent astringents to tone and constrict the soft tissues.

For the patient to use at home, the free application of bicarbonate of soda is prescribed for its well-known effect both on inflamed mucous surfaces and its obtunding effect on sensitive dentine.

Limewater, fallen somewhat into disuse, is a splendid alkaline astringent and detergent remedy. Salt, free and in solution, has often proved efficacious in reducing inflammation.

Mouth lotions made up of several carminatives in alcoholic solution do much to stimulate and tone sluggish mucous surfaces. The incorporation of perborate of soda in a tooth powder does much to keep the parts clean and aseptic.

Interstitial gingivitis is a preventable and curable disease, and the stomatologist who does not prove this fact to his patient fails in his duty.

129 Marlboro Street.

DISCUSSION

ON PAPERS OF DRS. POWER AND BRIGGS.

DR. M. L. RHEIN, New York: I have for a long time been convinced that, while there is a well-marked condition known as gingivitis, when the alveolar tissues themselves are involved we should come nearer the truth if we would term that condition alveolitis rather than gingivitis. Both forms of the disease are present at times, but on the other hand gingivitis is sometimes present when alveolitis does not exist. The question of nomenclature ought to be settled. I wish that I could thoroughly agree with Dr. Briggs in attributing organic troubles entirely to faulty metabolism. I agree with him that faulty metabolism plays an important rôle in this condition. I have in this respect repeatedly recognized the

1. Internat. Dent. Jour., April, 1891

value of what is known as Fletcherism. But, to illustrate the fact that faulty metabolism does not always play the initial rôle as the predisposing cause of this condition, we have renal trouble in children. This is not a question of faulty metabolism, the initial etiologic factor being the rapid development of the child physically. In such cases alveolitis often appears and urinalysis will show albumin, etc. Faulty metabolism may also be present, but only as a symptom, not as an etiologic factor. We should endeavor in our nomenclature to use great care in arriving at the true etiologic factor.

DR. EUGENE S. TALBOT, Chicago: I take issue with Dr. Rhein's views in regard to the etiology of this condition. He contradicts himself; the very fact that the child has had renal trouble and associated conditions shows so far as we understand pathology to-day, that those conditions are due to faulty metabolism, to want of proper assimilation and adequate distribution of the food to the tissues. Fletcherism should be taught in dental colleges. Oral hygiene and Fletcherism should be so impressed on the minds of the students that when they commence practice these will be the watchwords constantly in mind. Some of the best medical schools are already teaching Fletcherism, and it is considered one of the most important studies in connection with digestion and assimilation. The treatment, both constitutional and local, suggested by Dr. Briggs, is the best that can be recommended with our present knowledge of materia medica.

DR. N. S. HOFF, Ann Arbor: There is no serious disease that is more easily curable than interstitial gingivitis. It is curable in any stage, unless the extraction of the teeth is clearly indicated. Like many other diseases, however, the condition may recur. The whole subject of the treatment of this disease and the practice of oral prophylaxis is going to elevate the standard of all other operations. More than anything else that has come into dentistry in the last twenty years, the prophylactic treatment of Dr. Smith, that so many are using now, has elevated the standard of all operative procedures, and Fletcherism is going to help. Oral prophylaxis makes it imperative that we correct the malpositions of the teeth, and usually this is the first thing to do. We must retain all teeth possible to be retained, and keep each tooth in the best possible condition. This means practical oral prophylaxis and the cure of pyorrhea. This will finally revolutionize our system of crown and bridge work. The dentist of the future will have his hands full; he will have wonderful work to do. And if we are going to do what is expected of us in the future, how much is going to be expected of the dental college in the future! The course must be longer than three, four or five years for adequate dental preparation, and how we are going to get in a medical course with the dental is one of the things I can not understand. The ideals are becoming so high and the demands so great that in the future we shall have to specialize in dentistry more than ever before. We shall in a few years have more specialties in dentistry than medicine has to-day; no one man can do all the work required to be done in the future.

DR. ADELBERT H. PECK, Chicago: Hypodermic injections in inflamed areas must be used with the utmost care, and the medicaments should never be carried into the area of pus accumulation. I have seen most dire results follow such mistakes. The fixation of loose teeth is one of the most important matters to engage our attention in this connection. When the teeth are loose they should be fixed by some mechanical means so that they will be firmly held in position, thus avoiding continual irritation to the diseased parts in their daily use. The list of drugs Dr. Briggs has given is splendid. Iodin, in proper combination, is one of the best agents to be used in these conditions.

DR. N. S. HOFF, Ann Arbor: In regard to injecting cocain for operations on abscessed teeth, as suggested by Dr. Power, I am in the habit of injecting into the peridental membrane entirely and not into the gum tissue at all. This method is very satisfactory to me. If I can not get the syringe point into the membrane I take a small Gates-Glidden drill at the right angle, make a small drill-hole alongside the root, and through this inject into the membrane only one or two drops. In that way I run little risk, and have never had any trouble.

DR. JAMES E. POWER, Providence: In the case which I described, the little patient was under the treatment of three different physicians during his illness. It is reasonable to believe from the condition of the child that these practitioners were thoughtless and careless in allowing the disease to progress so far. My object in presenting this subject is, through the medium of THE JOURNAL of the American Medical Association, to reach many thousands of physicians, and through them, patients that could not be reached in any other way, saving them unnecessary trouble and pain.

DR. EDWARD C. BRIGGS, Boston: As to "faulty metabolism" not being a blanket to cover all the conditions, it depends on what is meant by "faulty metabolism." The baby who does not get enough fat in the mother's milk (the rest of the food being right), is perhaps normal in its metabolism, but suffers because something is left out. Again, a well-nourished individual whose colon becomes subject to putrefactive changes may be all right in every other respect. He eats well, digests well, has normal dejecta daily; his heart, kidneys, lungs, etc., on examination are found to be apparently almost perfect; the only thing we can find is a foul stool. Correct that and local treatment begins to have effect. I had intended to lay stress on the importance of fixation of loosened teeth in interstitial gingivitis. It is absolutely necessary to devise some splint for temporary or permanent purposes.

PHYSICS OF PHYSICAL SIGNS, WITH SPECIAL REFERENCE TO THE RESPIRATORY MURMUR.*

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BOSTON.

In these days of modern scientific medicine the study of physical signs is not receiving as much attention as it deserves. Scientific medicine stands essentially for two things: accuracy of observation, and the basing of conclusions on facts rather than on assumptions or theories. We view with pride the advances in our knowledge of medicine acquired by work along these lines, and pride is justified when we compare our knowledge to-day with that of even a few decades ago. But we are mistaken if we assume that medicine has already attained the rank of a science, for we have as yet made only a few steps in that direction.

Unfortunately our knowledge of physical signs has lagged far behind many other branches of medical knowledge. It is far from deserving the term "scientific," and it has fallen into disrepute which is more or less well deserved. The scientific investigator avoids this chaos of empiricism and is attracted to other fields in his research work—the more the pity, for we need his help most where the darkness is greatest. And yet this is one of the most important fields of medicine. We must make our diagnosis before our patient is a proper subject for investigation by the pathologist, and the laboratory worker can as yet solve only a few of the troublesome problems of diagnosis. In a large majority of cases we must still depend on our study of the sick patient himself, by the use of our own senses aided by a few instruments of precision.

One reason for the disrepute of physical signs is that we do not sufficiently train our senses to keenness of perception. Again we fail to appreciate fully that these signs are based on the laws of physics, and we are too

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often oblivious to the distinction between facts and fancy in our explanations. Until we rid physical diagnosis of these defects—imperfect or inaccurate observations, theories in place of facts, explanations that are both illogical and inconsistent with the known laws of science—it deserves the disrepute in which it is held by scientific minds.

Many of these illogical and ill-founded statements are hallowed by tradition. They were accepted by us as matters of course. They have become familiar by frequent use in the practice of medicine and stand in our estimation as established principles or facts chiefly because we have never questioned them critically. How many of them will stand close scientific criticism? The number that fail to meet these requirements is surprising.

Although our recent text-books on physical diagnosis are making some efforts in the right direction, they are still handing on many of these faulty traditions from generation to generation of medical students without even intimating that they are open to question. The text-books are open to severe criticism because they thus fail to discriminate between unfounded theories and established facts or well-grounded hypotheses. It is true that our knowledge of physical signs can not now be reduced to a satisfactory scientific basis, and that there are many problems that the science of physics is not yet prepared to solve. It is true that the medical men are not well enough trained as physicists to solve many of the problems and that the physicists are not working in this direction because they do not know what the problems are and do not realize their importance. We shall need highly trained physicists to help in the solution of many of these problems, just as we are now utilizing the services of highly trained chemists to investigate the problems of metabolism. But there is no need of waiting for this era of the future before making a beginning of our housecleaning. We can at least discard statements that are clearly inconsistent with the simplest principles of physics. In many cases we can estimate the degree of doubt about statements now accepted as truths. If an hypothesis is reasonable enough, we can accept it as such and use it as an aid in the search for truth. In this way we can at least determine more clearly some of the problems we want science to solve.

I believe that this is a most important matter in the future development of scientific medicine—a thing we shall never have until the methods in clinical medicine are scientific. At present we train students in the laboratories of the college and medical school to accurate, critical observation and to logical reasoning in accordance with the laws of science. But when we teach physical diagnosis—the foundation of clinical medicine—we pay little attention to scientific methods.

To illustrate these faulty methods I have chosen the respiratory murmur for consideration, although many other topics would make equally good examples. We are dealing with phenomena of sound. In the text-books the characteristics of the sound or murmur, as heard at various places on the chest, are described with fair accuracy. These sounds are compared as to quality, intensity, pitch and duration. The difference between the inspiratory sound and the expiratory sound at a given place is noted. The recording of isolated facts is fairly well done.

The recognition of two types of breathing sound is the first generalization from these facts and is too obvious to cause dispute, but serious differences of opinion arise as soon as we attempt to explain why there are two types. This leads to questions as to how and where the sound originates; and opinions, theories and assumptions are bandied back and forth by the best authorities with little regard for facts or the laws of physics. And yet the answer to these questions could be determined by experiments more easily than the physiologist learns about the digestive processes.

In the absence of such proof by experimental evidence we have only hypothesis or assumption; we should offer it as such and not as an established truth. For example, there are two opinions as to where the inspiratory murmur originates. According to one, it originates only at the glottis and all modifications are due to changes caused as it is transmitted through the lung tissue. The other opinion agrees that one type of the inspiratory sound originates in this way, but maintains that the second type originates in the minute air spaces of the lung. High authorities may be found in favor of each of these two views, and the question can not be regarded as settled. But often the text-book cites one opinion as if it were an established truth and does not even mention the existence of the other.

When there exists such a difference of opinion among the best authorities this fact should be stated, and the text-books should decide in favor of one view or the other. It should make this decision because in its opinion the view accepted is more nearly in accord with known facts and scientific principles, and it should give its reasons fully. I do not know of a text-book that gives more than an imperfect exposition of this matter. These publications rely chiefly on authority and not on demonstration to prove points.

Neither do any of the text-books discuss intelligently the transmission of the sounds from their points of origin to the surface of the chest. It is but a matter of the applied physics of sound. We can understand it best by adopting the attitude of the physicist. He thinks only in terms of vibrations—of matter in motion. He recognizes the fact that sound vibrations exist at the surface of the chest in association with rhythmic breathing. He asks these questions: What causes these vibrations? Where do they originate? How are they transmitted from the point of origin to the point where they are heard?

If our text-books are to teach physical diagnosis scientifically, they must adopt these same methods and teach the physics of physical signs. In this paper the limitations of time compel me to do exactly what I criticize the text-books for doing—to state my position on doubtful problems without giving reasons. However, as I am now contending for methods of study and teaching and not trying to establish facts, I may be excused for not practicing what I preach.

The answers to the first two questions of the physicist are as follows: The vibrations arise at two places—the glottis and the point where the minute bronchus opens into its air sac. The cause is the passage of air with sufficient force through a narrow opening into a wider space beyond—it being a general principle of physics that under such circumstances the air is thrown into vibration as it emerges into a larger chamber. It is easily understood that the intensity of vibrations at the glottis should be great enough to make them audible, but a word of explanation is needed as to the other

source of sound. The immense number of the air sacs which contribute vibrations cause an audible sound when the vibrations from small numbers of the sacs would be inaudible.

We now come to the study of the way in which the vibrations are transmitted from these points of origin to the surface. It will not be out of place to recapitulate some of the principles of the physics of sound that are involved in this study. From the point of view of the physicist, sound is a form of energy, existing in the form of vibrations of matter. These vibrations are of such a character that they are capable of being perceived by the sense of hearing, provided they have a sufficient intensity and the rate of vibration falls within certain limits. In studying the transmission of these vibrations, then, we are studying the transmission of a form of motion from one set of particles of matter to another set. If these particles of matter are uniform, that is, if there is a uniform medium, the vibrations will travel in all directions at a uniform rate for that medium, but will lose in intensity as the square of the distance. Different media will transmit the vibrations at different rates and may accordingly be classified as good or bad conductors. Sound vibrations are more or less reflected when in the course of their transmission they come to a boundary between two media. Sound vibrations are also more or less refracted within a medium of uniform consistency but irregular extent. These principles of the reflection and refraction of sound vibrations cause the vibrations to travel more easily within the confines of any anatomic structure than to be transmitted to surrounding structures. Bodies of uniform, elastic structure are especially good conductors. Soft, relaxed tissues, like membranes, which are poor conductors, may become good conductors if they are put on the stretch.

It follows that the vibrations will travel a certain distance in all directions from their point of origin, depending on their intensity at the start and on the conductivity of surrounding tissues. They will travel better and farther in certain directions, which will be determined by the anatomic shape, the consistency, elasticity and tension of the structures that are thrown into vibration.

Let us consider first the vibrations originating during inspiration in the air sacs. They originate throughout the lung structure. They have intensity enough to be transmitted to the overlying chest wall, if it is in direct contact with the lung tissue, and will be carried by an ordinary chest wall to the surface with intensity enough to be heard by the ear. The intensity, however, is not sufficient to carry the vibrations on the surface far beyond the anatomic limits of the lungs, nor can they reach the surface if anything intervenes between the lung and the chest wall.

In case of vibrations originating at the glottis during inspiration, the problem is a little more complex. There are two sets of vibrations—those originating in the air column itself, and those originating in the vibrating vocal cords. The vibrations in the air column will be transmitted down the air of the air passages as in a speaking tube, and the vibrations from the vocal cords find their best line of transmission along the walls of the air passages. Both these lines of transmission (air conduction and tissue conduction) are good so long as the bronchi are of moderate size and have stiff walls. In other words, the glottic vibrations are conducted throughout the inner part of the lung as far as the smaller bronchi extend. Between this point and the surface lies a more or less thick layer of lung parenchyma, which, with its minutely divided air spaces, is a poor conductor of vibrations. The glottic vibrations are distinctly audible at the surface over a thin layer of lung and the intensity diminishes with the thickness until it entirely fails to penetrate the thickest part, where we hear only the vesicular murmur. At intervening points we get a combination of the two types of breathing sound, and the predominance of one or the other is determined at any point by the anatomic relations beneath.

Let there be a little thickening of the lung tissue—as in the earliest changes of tuberculosis—and the laryngeal sounds are better conducted through the lung. The laryngeal element is found to be stronger than it normally would be at that point. This increases in proportion to the density of the lung tissue until with a solid area of the lung extending from the surface to the bronchi we get pure bronchial sounds.

Let us now consider the expiratory murmur. During expiration no suitable conditions exist in the lung parenchyma to cause audible vibrations and the vibrations come only from the glottis. Here the air is thrown into vibration as it rushes from the glottis into the pharyngeal space above, but these vibrations are practically all cut off by the vocal cords from reaching the air passages of the lung. The audible vibrations, therefore, come almost exclusively from the vibration of the vocal cords. These vibrations are transmitted (as in the case of inspiration) by tissue conduction through the walls of the air passages to the interior of the lung. They have not volume enough easily to penetrate the lung tissue. When, however, at the beginning of expiration the lung tissue is on the stretch these vibrations are faintly audible at the surface, but they become inaudible as soon as the lung loses this tension. The result is that over the thicker lung tissue the expiratory murmur is only a short puff at the beginning of expiration.

Let the lung tissue be slightly thickened, as in early tuberculosis, and there is better conduction of vibrations through it. The expiratory murmur is a little louder and longer. This increases with the density of the lung until with a consolidated lung there is a full bronchial expiratory sound.

With such an explanation of the respiratory murmurs, based on a consideration of the physics of the vibrations in the lung tissues, one gets an understanding of the complex combination of sounds in health and readily translates the variations that come with disease into terms of changes in the texture of the lung tissue. This is the real aim of auscultation of the respiratory murmur—to learn the texture of the lung tissue.

I do not claim that this explanation of the respiratory murmur is necessarily correct. It is based on hypotheses, not on facts proven by experiment, but it is consistent with the laws of physics and offers an intelligent basis from which to carry out further investigations which will confirm or disprove it. It is by steps of this sort that we shall advance to the truth, shall remove the opprobrium from which physical diagnosis now suffers, and shall introduce scientific methods into clinical medicine.

DISCUSSION.

DR. GEORGE N. JACK, Buffalo: Many cases of asthma have been sent to me diagnosed as bronchial asthma. On careful investigation I would find the obstruction to be confined wholly to the common air tube, the bronchi being entirely free of all râles or signs of obstruction. As the condition in the larynx would clear up the dyspnea and wheezing would disappear. I know of no other way to explain how through all ages asthma could have been classed as a nervous spasm unless the mistake was due to the transmission of sound from the trachea-larynx to the bronchi. The condition is not a nervous spasm, but is due to an obstruction in the air tubes. For the last ten years I have alone maintained that asthma is not due to a nervous spasm of the air tubes, and very recently Gee of Oxford (in the Gee Medical Lectures, 1908, pages 140 and 160) has taken the same stand. The real or severe dyspnea of asthma originates from a plugging of the common air tube which no one would accuse of spasmodically contracting. When the obstruction is in the smaller bronchi and the common air tube is open, asthmatics will breathe quite freely with little dyspnea; in fact, they can at such times exert themselves with little dyspnea when the chest is full of râles of all sorts as the numerous small bronchi are never all plugged at the same time. Can there, then, after considering the facts in regard to respiration that Dr. Arnold has brought out, longer be any excuse for asserting that a wheeze that can be heard clear across the street can come from the small bronchi way down in the chest?

DR. HENRY SEWALL, Denver: I believe that the terminology used in expressing the findings of a physical examination, such as calling the sounds heard "moist" or "dry," is too much restricted to denoting the subjective impressions aroused, which differ for every examiner, and too little descriptive of the objective physical conditions in the field. It is highly desirable that our armamentarium be enriched with devices which shall limit the range of the personal equation. Some years ago I carried on some experiments in this field with interesting practical results. It will be admitted that the sounds perceived in auscultating the chest owe their intensity to two sources: first, the vibrations of the tone-producing body, which may be conducted to the ear according to known physical laws; and, second, sympathetic vibrations which depend on the elastic properties of the media surrounding the vibrating body and which more or less reinforce the original vibrations; indeed, in certain sound productions, as in human vocalization, the resonance sounds far outstrip in intensity the unaided vibrations that give them birth. To be brief, the resonance tones of the chest wall can easily be damped and deadened. The remaining sounds are those that come by direct conduction from the vibrating body. This feat can be achieved by use of the ordinary binaural stethoscope having only air conduction between the bell and the ear tubes. Apply such a stethoscope over the aortic area and the second sound of the heart may be heard of great intensity. If the bell of the instrument be now pressed firmly into the second right interspace the sound nearly or completely dies away. That is, the second sound, as heard in the aortic area, owes its intensity to sympathetic vibration of the chest wall. On the contrary, if the stethoscope is applied to the area of the cardiac impulse, where the vibrations are conducted directly to the instrument, no amount of pressure does away with the heart sounds. I have found in "stethoscopic pressure" perhaps the most accurate means of outlining the borders of the heart, a feat which is frequently so difficult. It is interesting to observe that an instrument depending wholly on air conduction is necessary to the success of this method. If the original wooden, monaural stethoscope is used, increase of pressure, for example, in the aortic area, does not deaden the sound, for reasons that are obvious.

DR. H. D. ARNOLD, Boston: The object of my paper is to stimulate the clinician to think. To-day men should be more imbued with the spirit of scientific research and scientific thought; then they would work and make some advance in the study of disease, the same as the laboratory workers had done, and then they would be a greater credit to modern medicine.

REMISSIONS IN PERNICIOUS ANEMIA. *

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IOWA CITY, IOWA.

It almost requires an explanation for presenting any phase of a subject that has been considered so extensively in recent years as pernicious anemia, but the phenomena of remissions form a sufficiently interesting chapter in the disease to warrant its being made the theme of this brief paper.

A remission signifies but an abatement of symptoms, and so rarely does a complete restitution take place that it is to be regarded as a temporary period of improvement and not a cure. The earlier writers who coined the term progressive pernicious anemia evidently did not give due cognizance to the phenomena of remissions, because a disease process that is subject to remissions of improvement, or periods of latency, can hardly be regarded as distinctly pernicious; the term progressive is applicable in that it is not possible to bring the process to a standstill or promote a cure.

Out of a series of twenty-five cases seen during the last two and a half years I have taken a few striking instances as illustrative of remissions in pernicious anemia.

CASE 1.—*History.*—C. W., a laborer, aged 53, was admitted April 8, 1907, to the University Hospital, complaining of weakness and pain in the legs. He was a moderate user of alcohol but denied venereal infection. The family history was negative. Three years previously he had had a fainting attack after which he was confined to bed for six weeks. In December, 1906, he began to notice weakness and pain in the legs which had grown slowly worse.

Examination.—When admitted the patient appeared very anemic and poorly nourished. The legs were weak and he was unable to stand alone. The knee jerks were diminished and there was paresthesia and a mild degree of ataxia in lower limbs. Urine examination was negative. Gastric analysis showed total acidity 35, free hydrochloric acid 10. The blood findings, with subsequent changes, are indicated in the following table:

TABLE 1.

Date.	Red cells.	White cells.	Per cent. Hb.	Poikilocytes. Macrocytes. Microcytes.	Nucleated red cells.	Polymorphonuclears. Per cent.	Lymphocytes. Per cent.	Large mononuclears. Per cent.
4- 8-07	860,000	6,400	40	++	1 normobl. 2 megalo.	64	30	6
4-10-07	945,000	4,600	20	++	.....	63	35	2
4-13-07	556,000	2,200	30	++	1 stippled. 1 megalo. 2 normobl.	61	36	3
4-21-07	710,000	2,600	35	++	.....	48	50	2
5- 2-07	1,320,000	6,800	35	mod.	.....	67	26	7
5-16-07	2,390,000	5,600	40	few.	3 normobl.	69	27	3.5
5-24-07	3,090,000	2,000	40	....	.....	65	33	2
7- 7-07	3,350,000	2,700	48	....	.....	61	33	6
8-23-07	3,580,000	9,600	45	....	.....	82	17	1
9-27-07	3,720,000	9,800	55	few.	.. ..	83	16	1

Treatment.—At the time of the last blood examination the patient was able to walk anywhere without support, and generally felt well. The medication consisted principally of some form of arsenic. During the first three months of his stay he tolerated the drug very well, taking as much as 15 minims of Fowler's solution three times daily. Later an intolerance was manifest and only small doses, 3 to 5 minims, could be taken. The cacodylate of sodium was substituted, but even small doses of this preparation would lead to digestive disturbances, albuminuria, and puffiness of the face, compelling a discontinuance of the medicine. Although unable to take arsenic during the last three months of his stay, the improvement in his condition steadily continued. Gastrointestinal

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

symptoms were not present, except such as were evidently due to arsenic administration, and colonic irrigation was not a part of the treatment.

Subsequent History.—It became necessary to return the patient to the county farm in Iowa County about Oct. 1, 1907, where he continued to do well for several months, when he grew gradually worse and died in March, 1908. Unfortunately subsequent blood analyses and an autopsy examination were not obtained.

CASE 2.—*History.*—P. J., a farmer, aged 45, admitted to the University Hospital June 22, 1907, complaining of general weakness. Patient was married, had a family of five children, was a moderate user of alcohol, but denied venereal infection. The family and medical history were negative. In the summer of 1906 he complained of weakness in the back and shortness of breath. He continued to work until April, 1907, when he contracted a cold, coughed a great deal, but had no fever or pain. Shortness of breath became so marked that he had been unable to work on account of it and because of general weakness. He had occasional nausea and vomiting but no loss in weight.

Examination.—When admitted he was very anemic, skin of a lemon-yellow tint, scleræ icteric and mucosæ very pale. A hemic murmur could be heard over the precordium. The spleen was palpable. His extremities were weak and the ankles and feet swollen. The blood findings are shown in the following table:

TABLE 2.

Date.	Red cells.	White cells.	Per cent. Hb.	Poikilocytes. Macrocytes. Microcytes.	Nucleated red cells.	Polymorphonucleears. Per cent.	Lymphocytes. Per cent.	Large mononucleears. Per cent.
6-22-07	1,476,000	860	60	++	.....	60	35	5
6-24-07	1,730,000	1,600	45	++	.....	62	34	4
6-27-07	1,430,000	2,000	40	++	1 normobl.	64	33	3
7- 5-07	1,910,000	2,400	50	polychromasia +	.....	66	29	5
7- 8-07	2,110,000	4,200	40	mod.	.....	67	28	6
9-27-07	3,190,000	3,400	60	mod.	.....	68	26	5
10- 2-07	4,050,000	4,600	65	few.	.....	68	28	4

Treatment.—During the three weeks' stay in the hospital he apparently improved. He returned to his home to be under the care of his family physician, Dr. H. A. Powers of Emmetsburg, Iowa, who lived nine miles from his home, so that he was only able to see him about once every week or ten days. The medication was confined to Fowler's solution, but he was never able to tolerate a larger dose than 10 minims three times daily. He gradually improved, and when he returned the latter part of September, 1907, to the hospital for a second examination, his general appearance was in keeping with the improvement shown by the blood examination at this time. He appeared well and claimed to be able to do full farm work without becoming tired, and aside from an occasional swelling of the feet in the evening he suffered no discomfort.

Subsequent History.—After returning home the patient continued well during the winter, but since March, 1908, he has gradually lost strength and is now confined to his house and unable to carry on any kind of work. I am indebted to his present attendant, Dr. Baldwin of Ruthven, for some carefully prepared slides of his blood, and from these I have estimated that a marked deterioration has taken place in his blood, since the examination last October, as poikilocytes, macrocytes and microcytes are numerous, and normoblasts are present to an extent of 0.6 per cent.

Although the serial blood analyses are incomplete, it seems appropriate to refer to a third case.

CASE 3.—*History.*—W. J. W., a retired farmer, aged 64, was admitted to the University Hospital April 3, 1906, complaining of general muscular weakness and shortness of breath. The patient did not use alcohol and denied venereal infection. The family and medical history were negative. About ten months preceding entrance he began to lose strength, and experienced shortness of breath on exertion, which gradually became more marked.

Examination.—Physical examination revealed a marked pallor of skin and mucus membranes. The spleen was not enlarged but the extremities were very weak and the muscles soft and diminished in size. He was unable to walk without support. Reflexes and sensation were normal. The condition of the blood is indicated in the following table:

TABLE 3.

Date.	Red cells.	White cells.	Per cent. Hb.	Poikilocytes. Macrocytes. Microcytes.	Nucleated red cells.	Polymorphonucleears. Per cent.	Lymphocytes. Per cent.	Large mononucleears. Per cent.
4- 3-06	690,000	4,800	30	mod.	1 normobl.	46	52	1.6
4- 8-06	600,000	4,000	20	mod.	1 normobl.	42	56	2.0
4-13-06	520,000	4,800	12	mod.	.....	44	54	2.0
4-18-06	600,000	3,900	25	mod.	1 normobl.	39	59	2.0
5- 2-06	580,000	5,900	11	mod.	.....	39.2	59.2	0.8

The blood findings show an unusually low count during the month's stay in the hospital, the leucopenia being only of moderate degree, with a marked increase in the percentage of lymphocytes and mononuclear leucocytes, the entire blood finding being suggestive of Ehrlich's aplastic type of pernicious anemia with possible lymphoid hyperplasia of the bone-marrow.

Treatment.—The patient did not bear arsenic well, being unable to take the smallest doses. Red bone-marrow, colonic irrigation and rest in bed, formed a part of the treatment without influencing the disease process in any way, and his condition when leaving the hospital was not improved. His home physician was an enthusiast on the therapeutic virtues of a remedy called "goat's lymph" and applied it, he claimed, with apparently good results, as the patient became strong enough to walk about the town, attended to most of his business duties and enjoyed fairly good health.

Subsequent History.—Six months later he again began to decline and died in February, 1907. During the period of temporary improvement the home physician received much praise while the former attendant was given a blessing of a different kind.

OTHER CASES IN THE SERIES.

Of the series of cases referred to in this paper one patient drifted into the care of a Christian Science "healer" and another underwent the manipulations of an osteopath — both patients having very low blood counts. In each instance the treatment was followed by a remission of improvement, a fact which permitted the healing measure applied at the time to receive all the credit of the apparent cure. A number of the further remissions were observed in other cases, occurring under a variety of conditions, but in no instance could the improvement be attributed to any one definite therapeutic measure.

In the first case mentioned the change of the patient from the county farm to the hospital, with the improved hygienic and dietary condition, was no doubt a strong factor. The second patient was treated at home where the conditions were unfavorable for frequent medical attendance. Improvement in the series occurred with and without the use of arsenic.

In several instances where fermentative changes in the intestines were a prominent symptom, high colonic irrigation with normal salt solution seemed to be connected with remissions of improvement. One case of the aplastic type, which was subsequently confirmed at autopsy, resisted all measures of treatment and became progressively worse. In a baby 10 months of age, with the blood picture of pernicious anemia, improvement followed the weaning and institution of a proper milk diet.

A certain parallelism is maintained between the changes in clinical signs and blood findings, the blood condition being usually a fair index of the degree of improvement in the patient and also of the reactive

changes in the hematopoietic organs, especially the bone-marrow.

Barjon and Cade and other French writers lay much stress on the value of the syndrome "leucopenie-lymphocytose" in diagnosis and prognosis. The disappearance of the leucopenia and modification of the leucocyte formula suggests improvement and lessens the gravity of the prognosis; quantitative and qualitative changes in the erythrocytes being equally indicative of improvement. While Ehrlich, Lazarus, Bloch, Stengel, Senator, Stockton, Cabot and other observers have referred to remissions as characteristic of pernicious anemia, there have been very few who have been able to bear out the enthusiastic claims of Grawitz, who has reported several instances of cures or complete restitution of the blood to its normal state.

CLINICAL AND EXPERIMENTAL PERNICIOUS ANEMIA.

Although the blood undergoes a marked improvement in the remission period, it still preserves certain abnormal features indicating that a disturbance in hemogenetic function continues to exist. In this respect the experimental pernicious anemias produced in rabbits differ from the disease occurring in the human person. In using 0.5 mg. doses of the glucosid saponin and 0.02 mg. doses of ricin (a toxalbumin from the seed of the castor-oil plant) to produce pernicious anemia in rabbits—corroborating the work of Bunting—I found in several instances not only does an animal become tolerant to the toxin, especially with saponin in small doses, but if the toxic agent is discontinued the blood gradually returns to the normal and a complete restitution takes place, all of which is in keeping with the statement of Bloch that certain predisposing conditions exist in the hematopoietic structures of the human species which favor the production and persistence of pernicious anemia in man.

An analogy exists between pernicious anemia and leukemia in that both are liable to remissions of improvement, both are evidently of toxic origin and associated with changes in the bone-marrow.

At best a remission is but an apparent cure, and the practical point that suggests itself is the need of reserve in prognosis and caution in interpreting the results of various therapeutic measures—as the most promising are frequently unstable, meaning an amelioration more often than a definite cure.

That pernicious anemia is an expression of a toxemia —probably enterogenic in origin—is borne out by clinical studies and experimental demonstrations, so that care of the digestive tract is a special factor in the treatment of all cases. The recent work of Herter attributing etiologic significance to specific fermentations in the intestinal tract is very suggestive and it will be of interest to learn further about his series of cases in which the treatment consisted of the removal by colonic irrigation of the *Bacillus aërogenes capsulatus* from the intestinal tract.

While the present lack of etiologic unity prevails it is evident that the explanation of the remission phenomena and the finding of a definite curative measure are problems still to be solved.

DISCUSSION.

DR. CHARLES G. STOCKTON, Buffalo: Flint, many years ago, pointed out that in pernicious anemia a disappearance of secretions and ferments from the stomach, and the etiology of the disease was laid to a gastric atrophy. As time went by all gave up Flint's idea. It is a remarkable fact that he made the observation, so long ago, of the disappearance of the gastric secretions and ferments in the majority of cases of pernicious anemia. The secretions do not disappear in all cases, as has been pointed out to-day. In the cases that I have studied, and they amount to a considerable number, after a true remission I have not found a corresponding improvement in the digestive tract. There has been an improvement in certain cases; but those cases in which there was a great improvement in the gastric secretion were never cases of achylia gastrica, but seemed to be cases on the border-line; also the anemia turned out not to be true pernicious anemia. I think that we should be somewhat guarded in our classification of pernicious anemia. Cases that were formerly called pernicious anemia we hesitate to name. On the other hand, cases formerly called secondary anemias are now classed as pernicious anemia, and to that class belong the cases reported to-day. I have known these remissions to continue over a long period of time. One of the most typical cases I know of, lasting ten years, was followed by a remission which, so far as I know, still continues. I heard from this patient one year ago; he reported himself to be in perfect health. The blood count was very low and in every way the case was quite classical. I recall another case, that of a woman, who had four or five remissions, never severe but typical. These four or five remissions covered a period of eight years. These, however, were exceptional cases. From a clinical point of view these cases appear to be cases of pernicious anemia. There are few diseases that we seem to know better than this disease and yet its real nature remains obscure. As to the remedies bringing about remissions, I believe in a course of treatment not only by arsenic and hydrochloric acid, as recommended by Dr. Dock, but by colonic lavage and hygienic measures. I have seen patients get better who did not follow this course of treatment, yet I feel confident that good is accomplished by it.

DR. WILLIAM S. THAYER, Baltimore: I have seen one case of apparent recovery; this case was very similar to the one reported by Dr. Stockton. The patient was in Dr. Osler's ward in 1890, and presented the classical picture of pernicious anemia. The lowest blood count was 800,000 and the patient had a high color index, as well as poikilocytosis. After three or four months' treatment the blood count rose to 5,000,000 and over, and the patient left the hospital apparently well. Five years later the man came back again with all the signs of a carcinoma of the stomach. The blood then was absolutely normal. He soon left the hospital and I have never been able to get word from him since. Last year I saw a second case in which the blood appeared perfectly normal. This patient entered the hospital in May, remained two or three months and made a remarkably rapid recovery. The blood count was over 5,000,000 and the entire picture of pernicious anemia disappeared. The patient died in February.

DR. ALFRED STENGEL, Philadelphia: My experience has been that the more cases I see the less certain I am in making an absolute diagnosis of pernicious anemia. During the past two or three years I have seen a series of cases in which the blood picture was that of pernicious anemia, yet they differ so in their clinical course and in other respects, that I doubt whether I have made a correct diagnosis. In many of these cases there were evidences of intestinal disturbances. In one case there was a slight but continuous bleeding from the intestinal tract; the stools were constantly tinged with blood and the loss of blood in the aggregate must have been great. In another case the stools swarmed with infusoria which I could not identify. In three cases slight hemorrhages occurred, and these were occult in the stools. In another instance there were evidences of putrefactive changes in the feces. These cases all ran a typical course. All showed a rapid improvement when given intestinal lavage with simple water and instillations of nitrate of silver. All, however, relapsed eventually. Three or four patients have since died. The blood picture in these cases was largely that of pernicious anemia, but not sufficiently so as to make, in my mind, a diagnosis absolutely certain. In some of these cases the picture presented was typically that of pernicious anemia. In several

cases remissions occurred from time to time. One case under my care for a year or two at one or another hospital, has been treated at either the Pennsylvania or University Hospital during the past eight years, entering nearly every year. The patient has been under my care not less than three times. He presented a typical picture of pernicious anemia; there was no mistake in this case. With regard to the treatment, arsenic relieved many of the attacks. I have known of one case, which I reported, that has been under my care four different times in four different years with relapses. These relapses, as Mackenzie has said, running over a period of years, are not infrequent. An important point in drawing deductions is to learn to differentiate between the intense anemias, anemias especially of the pernicious types, and cases of genuine pernicious anemia; but how to draw a border line in these cases I do not know.

DR. W. M. MCCABE, Nashville: I believe that if Dr. Herter is correct in his theory that pernicious anemia is due to anaerobic bacteria in the intestinal canal, then intestinal lavage is the proper treatment. I had a patient under my care at the City Hospital, in the service of Dr. John A. Witherspoon, with a leucocyte count of 3,000, an erythrocyte count of 1,500,000, hemoglobin index 1.5 per cent., nucleated red cells, etc. Appendicostomy was performed and the colon was irrigated twice daily with two gallons of saline solution. Several weeks after this treatment was begun the leucocyte count was 7,000, red cells 3,200,000, hemoglobin index 0.9 per cent., and no abnormal types of cells were present. It is especially interesting to note that examination of the stomach contents showed lactic acid in large quantities and an absence of free hydrochloric acid. This would be frequently examined to see if the free hydrochloric would return. At operation the stomach was examined and found somewhat contracted. No cancer was present.

DR. HUGO A. FREUND, Detroit: As a rule we should give a good prognosis in a given case of pernicious anemia, that is, for a relative length of time. All cases that I have seen came to me with a distinct and definite picture, but there were some cases, only a small number, that showed a rapidly progressive type. These are best described as primary progressive cases. I believe that the general practitioner should give a good prognosis in all the cases he meets, but only for a relatively short length of time. The influence of treatment is only relative; experience with these cases shows that but little difference is made whatever treatment is employed, whether by arsenic, hydrochloric acid, pancreatin, goat's lymph, osteopathy, Eddyism, or what not; all have been useful at times, however. There is a time when patients have blood crises, or blood showers; this I have noticed on many occasions. It has been asserted that when these showers occur dissolution is soon to follow. In a large number of cases watched at the University Hospital at Ann Arbor death did not follow; and these blood showers occurred in a large percentage of the cases. What does it mean? Probably it is an attempt on the part of the bone marrow to regenerate. If the body is attempting to restore the normal function of the blood it seems to me this is a propitious moment for such a restoration, and the giving of arsenic at this time is usually followed by beneficial results. Some of these patients persisted in a good state of health for a long time. I recall one case under observation for eleven years; I still hear from this patient and there has been no return of the symptoms. With these showers a low blood count has been noticed; cases have been reported of a low blood count, in which there has been a decided improvement following treatment; the patients get well. Some of these are remarkable cases. In these showers there usually occurs a larger percentage of red cells per centimeter than white cells. Lymphocytosis is an interesting phase in this disease; an increasing lymphocytosis was prognostic of dissolution.

DR. JOHN A. WITHERSPOON, Nashville: I had a patient, a man, 35 years old, who had a typical pernicious anemia so far as the symptoms and blood findings were concerned. I have always hesitated in advising appendicostomy and colonic irrigations; I have generally been able to get along without it. In this case, however, I believed it wise to give it a trial. The result was that, with a patient evidently rapidly approaching dissolution, the man gained ten pounds in weight during the last ten days, and has made a marvelous improvement. Whether this improvement will be permanent or not I do not know; but it is a remarkable fact that in this case, with the patient progressively going to the bad, and apparently with but a short time to live, I should have such an excellent result from the use of colonic irrigations of normal saline solutions given twice a day; the recovery was certainly a rapid one. The fact that this patient gained ten pounds in weight in such a short time is good evidence at least of marked improvement in his powers of digestion. I shall try to keep in touch with this patient and report further in the journals. I am prejudiced against appendicostomy.

DR. JESSE S. MYER, St. Louis: I have a patient, a man 60 years of age, who has been under my observation for over a year. He came to St. Louis from Georgia in a state of perfect collapse. He had the most marked degree of anemia that I have ever seen. There was anasarca, dyspnea and the typical picture of the blood of pernicious anemia. The intestinal symptoms were very marked, and characterized by a severe and persistent diarrhea. Because the patient came from Georgia, where there are many cases of infection with *Anchylostoma duodenale*, and because of the marked intestinal symptoms, with traces of blood in the feces, with a blood picture of pernicious anemia, I felt justified in instituting the regular specific treatment for *A. duodenale*, even though I was not successful in demonstrating the existence of the eggs in the stools. Thymol was given in large doses and the improvement was so marked that in one month the patient was able to return to his home and resume his duties. At the end of six months, however, he reported that he was in a similar condition. His physician resorted to thymol again, but without any effect whatever and the patient died. The apparent response to treatment for infection with *A. duodenale* simply proved to be a coincident remission in the symptoms of pernicious anemia described by Dr. Bierring.

DR. WALTER L. BIERRING, Iowa City: Dr. Stockton's statement that in remissions of improvement in pernicious anemia there is no return of the free hydrochloric acid in the gastric juice corresponds with that of Grawitz, who firmly believes in the possibility of a complete cure in pernicious anemia, and has reported two cases, one of five and the other of eight years' standing, in neither of which was there a return of the free hydrochloric acid in the gastric secretion, indicating that a complete restitution to the normal had not taken place. The view expressed by Dr. Stengel that a number of similar conditions are met in which a pernicious type of anemia prevails is very apt—as evidently such states as aplastic and metaplastic anemia, chloranemia, and severe instances of secondary anemia, are closely related, all being dependent more or less on changes in the bone marrow, resulting from toxic influences acting on this tissue and other hemopoietic structures. True pernicious anemia of the Biermer type is not as common as generally believed; in fact, it is a rather rare disease. Its greater frequency in later life supports the view that changes take place with age in the hemopoietic structures which predispose to the production of this disease.

The suggestion of appendicostomy as a therapeutic measure to facilitate the irrigation of the colon is very interesting. While colonic irrigation certainly influences toward improvement this does not mean that every case of pernicious anemia is necessarily colonic in origin. The uncertainty of our knowledge of the etiology, toxic agent and portal of entry makes it difficult to judge properly the merits of the different methods of treatment that are proposed in this disease.

Spermatocystitis.—N. E. Aronstam, in *Central States Medical Monitor*, states that spermatocystitis or seminal vesiculitis, as it is sometimes styled, is the most difficult pathologic condition to treat in the domain of genitourinary surgery. Not much time should be lost in internal medication, but the affection should be attacked from its very seat by manipulations, sounds and frequent irrigations. Even these measures may effect no results. Under these circumstances we must resort to a vasectomy.

PELLAGRA.

ITS OCCURRENCE IN THIS COUNTRY; REPORT OF CASES.*

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Pellagra is a trophoneurotic disease, affecting the cerebrospinal, digestive and cutaneous systems and characterized by an erythema. The immediate cause of pellagra is a fatty oil or extractive, called by Lombroso pellagrozein, that develops in fermenting and decomposing maize. This extractive is probably formed under the influence of a fungus. Poverty and unhygienic surroundings are predisposing causes, and most cases probably occur among the agricultural class, because they raise maize and eat it as a regular daily diet. Women are more often attacked than men, and children less often than adults. The disease occurs more often in patients between the ages of 30 and 50. As the erythema selects those portions of the body exposed to the sun's rays, it is more than probable that exposure to the sun is a factor in its development.

Belmondo believes that the disease is due to a specific organism. Lombroso experimentally produced in men and animals, with an extract from decomposed maize symptoms, analogous to those of pellagra. In Egypt pellagra occurs only where corn is eaten.

After a careful inquiry among farmers in regard to corn, I found the following facts:

1. Corn that is allowed to mature on the cob does not ferment or decompose after being gathered, and is suitable, as food, both for men and animals.

2. Corn gathered before maturing on the cob always ferments and decomposes. This process of fermentation is called "heating," and that of decomposition "rotting."

3. If this decomposed and fermented corn is fed to animals (except swine), it produces a condition called "blind staggers," which is accompanied by a severe diarrhea and inability of the animal to stand. It staggers from side to side, and is apparently blind. This disease is very fatal, 98 per cent. of the animals attacked dying, and if the animal passes through the acute attack, it is spastic and never able to work again, because of stiffness of the limbs. That the acute attack is analogous to acute pellagra, and the chronic condition to chronic pellagra, is probable.

4. Farmers have learned never to give decomposed corn to their stock. When visiting other people, some farmers will not eat bread or grits, for fear of it being made from decomposed corn.

5. The extreme end of the cob, which often projects from the end of the shuck, always decomposes, and farmers cut this off before throwing it into the bin.

6. When corn is planted, the farmers watch the hills, and if any fail to grow, they are replanted. In this way, when harvest time arrives, there is some corn not mature, and if it is used in this condition there is danger of the other corn becoming contaminated by it. The better class of farmers eliminate this corn, or leave it until it matures. In spite of this, some decomposed meal is marketed. When mixed with good meal, it is scarcely noticeable, and is sold at reduced prices to the very poorest. In this way, we account for the occurrence of pellagra.

Prior to 1907 pellagra was not recognized as occurring in the United States. During that year, Dr. G. H. Searcy[1] reported eighty-eight cases of acute pellagra occurring at the asylum for the (colored) insane at Mount Vernon, Ala. This epidemic was very fatal, 64 per cent. of the patients dying. The maize eaten at this institution was found to be decomposed and unfit for food.

A sporadic case was reported by Dr. T. C. Merrill[2] of Colorado, Texas, in September, 1907.

Dr. J. W. Babcock, of Columbia, S. C., reported to the State Board of Health nine cases of pellagra. Three of these cases were complicated by hookworms, and treatment for this condition helped them.

Besides the cases which I report, a half-dozen more have occurred in my community. That this disease has been occurring there for many years there is little doubt, as a careful inquiry among older physicians brings to light many unrecognized cases.

PATHOLOGY.

There is fatty degeneration of the liver, kidneys, spleen, and myocardium; atrophy of the muscular coat of the intestines, and sometimes ulceration; atrophy, sclerosis and pigmentation of the skin; pigmentary degeneration of the cells of the brain, cord, liver, spleen, kidneys and heart; sclerosis of the crossed pyramidal tract in the dorsal portion; and degeneration of the column of Goll, in the median portion.

The posterior roots usually escape. Lombroso found Burdach's column and the posterior roots sometimes affected. There is, generally, involvement of the membranes of the brain and cord, with much thickening. The abdominal viscera are usually atrophied.

SYMPTOMS.

Chronic Form.—The symptoms begin in spring, with lassitude, headache, and anorexia. The epigastrium is usually tense, and there may be nausea and vomiting. Diarrhea—serous in quality—soon follows. This may be very severe, numbering ten to forty stools a day. The tongue is inflamed, red and smooth. In ten days to two weeks, as a rule, there develops an erythema, confined to those portions of the body exposed to the sun. The parts most usually affected are the backs of the hands; next, the backs of the hands and forearms, elbows, face and neck, in the order named. Those who go barefooted usually have the erythema on the backs of the feet. The back and chest may be affected, but this is rare. Sandwith's Egyptian cases showed the elbows and forearms often involved. The erythema is usually bright red in color, very like sunburn, and disappears on pressure, unless hemorrhagic. There are often vesicles and bullæ, but there is little itching and burning compared to the extent of the process. Generally, in two weeks from the beginning, the erythema subsides, becoming brown in the center, and desquamation takes place, leaving a thickened, rough and brownish skin. After repeated attacks, the skin becomes sclerosed and pigmented and finally atrophies.

Application of salves and washes to the erythema does not benefit it. It seems to run a regular course, and if left alone, disappears earlier than if treated. The diarrhea is particularly stubborn, and will not yield. There is not the burning nor itching that is seen in other erythemas; for instance, genuine sunburn.

Toward late summer, the patient begins to improve,

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. Searcy, George H.: Epidemic of Acute Pellagra, THE JOURNAL A. M. A., July 6, 1907; xlix, 37.
2. Merrill, T. C.: Sporadic Case Diagnosed as Pellagra THE JOURNAL A. M. A., Sept. 14, 1907, xlix, 940.

and may feel perfectly well during the winter, until the next spring, when a recurrence takes place, with greater or less severity.

After the third recurrence, the patient usually becomes much emaciated; diarrhea increases in severity, and melancholia, increasing to dementia, occurs. There may be edema and foul sweats. Paralysis of the third nerve and changes in the fundus oculi have been observed. There may be epileptiform convulsions, paresis of extensors, and paralysis of the bladder. The knee jerks and all reflexes are much increased early in the disease, but toward the end they are either diminished or abolished. There is no albuminuria as a general rule, and ankle clonus is rare. Blood changes are unimportant. The disease lasts five years, on an average, but may be prolonged fifteen years.

Acute Form.—This begins with pain in the epigastrium, headache, nausea and vomiting. This is followed by a severe diarrhea and stomatitis. The stools are often bloody, and occasionally there is bleeding from the gums and tongue. The patient emaciates rapidly. The erythema follows the same course as in the chronic form. There is some elevation of temperature, but not higher, as a rule, than 102 F., usually ranging between 99 and 101 F. There is delirium and a typical typhoid course, which usually ends in death in ten days or six weeks. I have never seen a patient recover.

I have ten cases of pellagra to report; three of these are of the chronic form, and seven of the acute.

CHRONIC CASES.

CASE 1.—*Patient.*—Miss L., white, aged 45, American born, family history negative.

History.—The patient had enteric fever at 20 years of age, and malaria several times. She has never been strong, but fairly healthy as a rule. She does not use alcohol, and there is no history of syphilis. She uses snuff, moderately. During March, 1907, she had headache and some distress in the epigastrium, and vomited occasionally. This was soon followed by a severe diarrhea, which was painless, and serous in quality. She became much emaciated and very weak. In early part of April an erythema developed on the backs of hands and lower part of forearms. This was much like sunburn. Very soon a few bullæ and vesicles formed. There was very little burning or itching.

Examination.—The patient's tongue was red, smooth and painful. Her temperature was normal; pulse 100 to 120. The heart and lungs were negative; abdomen flat, and nothing abnormal on examination. The pupils were equal and reacted to light and accommodation. The reflexes were much exaggerated, and there was no ankle clonus. Urine contained neither albumin nor sugar, but an abundance of indican. Examination of the blood revealed a well-marked secondary anemia, no abnormal cells, and absence of leucocytosis.

Course of Disease.—The erythema persisted for three weeks; then the skin became much thickened, with a brown hue, and exfoliated, leaving a rough, thickened brown skin beneath. The diarrhea continued through the summer, during which time the patient was very weak, and became much emaciated. She was much depressed, and cried often. In October, 1907, she seemed perfectly well. In April, 1908, she had a recurrence. She is now in the country, and her symptoms are much more severe than they were in the original attack.

This patient lived on a farm with a niece. Her corn supply gave out in December, 1906. She bought corn elsewhere, and used this during the winter and spring. Her niece, who lived with her, did not eat corn in any form, but patient did so daily. An examination of this corn showed that it was unfit for food.

CASE 2.—*Patient.*—Mrs. D., widow; aged 56; American born, family history negative, except that one brother had tuberculosis.

History.—The patient was never a very strong woman, but had no sickness of note. She never usd alcohol and had no syphilitic history. She felt bad during February, 1907; was often nauseated, and had no appetite. A severe diarrhea began in March, 1907, and was accompanied by stomatitis, the tongue being especially painful. An erythema confined to the backs of the hands developed in a few days. This was like sunburn, and there were a few bullæ and vesicles. She was much emaciated, and starved herself because of diarrhea.

Examination.—The patient's temperature was 98.4, pulse 110. Heart and lungs were negative; the abdomen was flat, with some tenderness on pressure. The abdominal viscera were negative. The urine contained neither albumin nor sugar, and blood showed secondary anemia.

Course of Disease.—The erythema subsided in a month, leaving a brownish, thickened, rough skin. The patient had diarrhea continuously until September, 1907, when she improved, gained flesh, and diarrhea subsided. During the winter she seemed well, with the exception of some mental depression at times. In March, 1908, recurrence took place, but was not so severe as the original attack. The diarrhea was not so severe, but stomatitis more so, the tongue being especially inflamed, red and smooth. The erythema was confined to the backs of hands as in the original attack, and was never red, but was brown in color from the beginning. The skin exfoliated, leaving the backs of hands brown, smooth and atrophic in appearance. The patient was much depressed mentally and showed some evidence of melancholia. The reflexes were much exaggerated and there was some spasticity about her gait. There was no elevation of temperature, and the pulse was 90. Examination now showed that the abdomen was negative, and heart and lungs the same. The urine was diminished in quantity, but contained neither albumin nor sugar. There was some anemia.

This patient's chief diet was corn bread and grits, a sample of which could not be procured.

CASE 3.—*Patient.*—Mrs. W., aged 36; American born. Family history negative.

History.—The patient was always healthy, up to March, 1906. At that time she had epigastric pain, headache and nausea. This was followed by a severe diarrhea, serous in character. In April an erythema developed on the backs of hands and forearms; it looked like sunburn, and was accompanied by vesicles. The patient was sick all summer; apparently recovered in October, 1906, but relapsed in the spring of 1907, having the same symptoms as in original attack, except in a severer form. She again apparently recovered in the winter of 1907, but again relapsed in March, 1908, at which time I saw her, with Dr. T. M. Green.

Examination.—The patient was now much emaciated and had a severe diarrhea. Her tongue was red, smooth and very painful. On the backs of hands and forearms, over and below each eye, on each side of back and front of neck, there was the evidence of a subsiding erythema. This condition was also evident on the under surface of forearms and on elbows. The skin was very brown over these areas, and in some places almost black. It was rough and much thickened. Erythema appeared only on face and neck during this recurrence. The patient had dementia, preceded by much mental depression. Her reflexes were much exaggerated, and sense of pain and temperature much retarded. There was slight ankle clonus, and pupils responded sluggishly to light and accommodation. The heart and lungs were negative. The abdomen was flat, with some enlargement of the spleen. The blood was negative. The urine contained albumin and casts.

This patient died May 19, 1908.

She had eaten corn bread daily and grits occasionally; a sample could not be obtained.

Autopsy.—The liver and kidneys appeared atrophied. The spleen was slightly larger than normal. Microscopically there was fatty degeneration of liver and kidneys, and extensive degeneration of the posterior and lateral columns of cord. The spleen and adrenals appeared normal. The brain and different levels of cord were not examined. There was some thickening of membrane of brain and cord.

ACUTE CASES.

There were seven acute cases. Three patients were colored and four white; they ranged in age between four and forty years. They were all in apparent good health before attack. There was no history of syphilis in any; two used alcohol. One of these was a chronic alcoholic; the other used alcohol only in moderate amounts. They were all American born. They all ate corn bread and grits daily. One patient had myocardial degeneration. His urine contained albumin and casts. This condition was probably due to the alcohol which he used to excess. This patient's abdomen and lungs were normal, and his reflexes not exaggerated. An examination of the urine, heart, lungs, abdomen and reflexes of the other six showed them to be negative. The pupils of all reacted to light and accommodation. An examination of their blood showed an absence of leucocytosis, malarial parasites, and bacteria of all kinds. None had the *Ankylostomum duodenale,* or its ova, in the stools. The patients were all attacked suddenly, the first symptoms being headache, slight fever, 100 to 102 F., and some nausea. There was anorexia and some gastric distress. All had severe stomatitis, six bleeding from the gums. The tongue was red, and much inflamed in each case.

Three cases in children showed the erythema well developed on the dorsum of feet. In these cases there was much inflammatory edema of feet, with bullæ and vesicles. These children also developed erythema on the backs of hands and forearms, over each eye, and on back of neck. They went barefooted. One of the other four patients had erythema on the backs of hands and forearms, elbows and back of neck. In the other three, the erythema was confined to the backs of the hands. Erythema was symmetrical in all cases. All the patients had diarrhea. In four cases, it was very severe, numbering thirty to forty stools a day; in two, about fifteen stools per day; and in one, three to eight stools. In two cases, stools always contained blood in abundance, and in one case, occasionally. The diarrhea in other cases was always serous in quality.

The erythema at first could not be differentiated from sunburn, but in a few days the skin became livid and vesicles developed. The skin gradually thickened, lost its angry look, and in two or three weeks, all erythema had disappeared, leaving a brownish red and thickened skin. In those cases which lasted only ten days, these changes could not be seen.

There was delirium in six cases, and in three it was well marked, for it was necessary to hold the patients in bed forcibly. The chronic alcoholic was not delirious, and diarrhea was not severe in his case, yet the erythema and stomatitis were particularly severe.

After a few days or a week, temperature was either normal or not above 100 F. In six cases there was gradual emaciation, loss of strength and development of stupor. The patients gradually passed into the typhoid state with delirium, carphologia and finally death from toxemia.

All these patients died. Three lived six, eight and ten days, respectively. One lived three weeks, two lived a month, and one lived six weeks. Every drug thought indicated, including arsenic and specific treatment, was tried in earlier cases, but, as this treatment gave no result, the other cases were treated symptomatically. In three cases autopsy was made, except on the spinal cord and brain, and nothing abnormal found. It was impossible to examine the nervous systems. Postmortem was refused in other cases. I am sorry that I can not report the pathologic changes in these cases, but circumstances prevented it. That we have genuine pellagra in the South I am sure, and there is no doubt in my mind that the above were genuine cases of the disease.

DISCUSSION.

DR. WILLIAM S. THAYER, Baltimore: It is true that there are a great number of cases of pellagra to-day. To pellagra, like uncinariasis, not much attention was paid until many cases were reported. In a paper published by Dr. J. F. Babcock of South Carolina, who was in charge of the State Asylum, it was reported that there were cases of pellagra in the vicinity, and that a number of cases had been found in the asylum. I saw a case one or two years ago that might have been one of this disease. It was remarkable how symmetrical the changes were, involving the hands, the forearm, with the formation of bullæ, scabs, etc. At the time I saw this case I thought of pellagra, but there were certain symptoms suggestive of myxedema present. I cured this patient by thyroid. I doubt not but that in a few years there will be as many reports of cases of pellagra as there have been of uncinariasis since the work of Stiles.

DR. JOHN L. DAWSON, Charleston, S. C.: Undoubtedly this disease, pellagra, exists among us and is not recognized. Since the paper by Dr. Babcock several cases have appeared in the city of Charleston and surrounding country. I have seen three cases, none of which would have been diagnosed had it not been for the publication of the paper by Dr. Babcock.

DR. ALFRED MEYER, New York: Is it not proper for the state and country to take cognizance of such a disease as exists in and about Charleston, and to suggest certain measures for its effacement, such as described by Dr. Bellamy? If some authority were obtained, as by the national Food and Drugs Act, some power of controlling this disease might be had. Perhaps it is more common than supposed, and will be more commonly recognized in the future, and something should be done for its suppression. I advise drawing attention to governmental rather than to individual medical efforts for the prevention of the spread of pellagra.

DR. R. H. BELLAMY, Wilmington, N. C.: When changes take place in the corn after its gathering, it has been gathered before it was mature. The meal was obtained from the corn after the ferments had produced the condition. Many believe this disease to be due to a specific organism; but if this were so the corn and meal could not be the source of infection, for these foods are always cooked two hours, and any organisms which they might contain would be killed. We have reported these cases to the State Board of Health, and are now prepared to go before the State Board of Agriculture. We have obtained the consent of the farmers to study the disease, and the farmers have been asked to be more careful in gathering the corn. I have no doubt that there are one hundred cases occurring every year that are not recognized. I myself see from twelve to fifteen cases every year. Although the disease was not seen or at least not recognized in my part of the country before 1903, there are certainly plenty of cases there now, and generally of the acute type, that is, there are more of the acute than of the chronic form of pellagra.

Local Pigmentation in Tuberculosis.—M. Delmont-Bebet, *Progrès méd.*, May 2, calls attention to a peculiarity observed by him in several hundred infants afflicted with localized tuberculosis, namely, that the sun tan is much more pronounced in the affected parts. At the maritime hospital Berck, the children go without stockings in summer and so are exposed to the sun's rays for several hours of the day which quickly tan all exposed parts, and he noticed a marked difference in the intensity of pigmentation of the exposed surfaces of the affected limbs as compared to their fellows, the tan being much more pronounced on the former. In fact, it is easy to judge which side or member is affected by this sign. It persists after operation and in the recently cured, but M. Delmont-Bebet has not been able to say how lasting it may be in those long cured. It is not seen in rachitic infants or those affected with other non-tuberculous conditions.

THE ASSOCIATION OF AGE AND INCIPIENT CATARACT WITH NORMAL AND PATHOLOGIC BLOOD PRESSURE.

A STUDY OF THESE CONDITIONS IN FOUR HUNDRED MEN ABOVE SIXTY YEARS OF AGE.*

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As one studies the conditions of the eyes and blood vessels of elderly persons, especially of men above the age of 60 years, he becomes more and more convinced that certain changes are taking place in their tissues and organs with great uniformity. This uniformity is so pronounced as to suggest an inter-relation between these changes or the dependence of each on a common cause. These changes are incident to or at least associated with age, and are probably always degenerative.

The purpose is to show by statistics how uniform these changes are and their relation to each other, *if they have any.* It is desirable to emphasize the importance of age in its relation to cataract. The relation of age to blood pressure, *if any exists,* is not close and intimate. This will be shown later by statistics.

We are concerned at this time with the changes of age as we see them in the lens, and find them in the blood vessels by palpation and instrumental examination. It is difficult to estimate the influence of age in the etiology of blood pressure, since age is often associated with arterial sclerosis and high blood pressure, but not necessarily so, and can not be studied separate and apart from certain concomitant tissue changes or attributes which are believed to be pathologic themselves, and which those who indulge in excesses of any kind bring on prematurely.

The essential elements in the relation of age to cataract, close and intimate as they possibly are, have so far eluded demonstration, and statistics do not throw much light upon them. We know that the proportion of cataracts increases with each decade or half decade from fifty years upward, as shown by these and other statistics.[1] It is higher in the class of men with pathologic than in the class with normal blood pressure, but of the essential cause we know comparatively little. The works of Metchnikoff, "The Nature of Man," "Orthobiosis" and the "Prolongation of Life," give the best scientific exposition of age with which I am familiar.

Jackson,[2] of Denver, has given the statistics of 1,545 persons over 50 years of age, patients in Wills Eye Hospital, Philadelphia; 439, or 27.8 per cent., had some degree of lens opacity. Arranged in five-year periods, the per cent. showing such opacities was as follows: 15 per cent. between 50 and 55, 16.1 per cent. between 55 and 60, 30.2 per cent. between 60 and 65, and 77 per cent. between 65 and 75. Norris[3] has given statistics of 584 inmates of the poorhouse, between 50 and 60 years of age, in whom 264, or 45 per cent., had traces of cataract.

These statistics were compiled before the importance of blood pressure records were recognized, hence we lose whatever information such records might have furnished.

In the accompanying statistics age and incipient cataract have been considered at length and the result will be given further on, but the chief task I have assigned myself has been to show by statistics what influence, *if any,* arterial sclerosis and high blood pressure, or the causes which lead to them, have in the etiology of cataract. Theoretically there are many reasons why this influence should be great, but practically its importance seems to have been overestimated. For example, with normal blood pressure I have found in 59 men, between 60 and 65 years of age, 37.3 per cent. of cataract; in 79 men, between 65 and 70, 41.8 per cent.; in 35 men, between 70 and 75, 54.3 per cent.; in 20 men, between 75 and 80, 70 per cent.; in 4 men, between 80 and 85, 75 per cent. A steady but not pronounced increase is observed up to the period between 85 and 95, in which the number of cases of cataract is too small to be of any statistical value.

With pathologic pressure I have found in 57 men, between 60 and 65 years of age, 42.1 per cent. of cataract; in 61 men, between 65 and 70, 54.1 per cent.; in 44 men, between 70 and 75 years, 55.8 per cent.; in 22 men, between 75 and 80, 68.2 per cent.; in 12 men, between 80 and 85, 83.33 per cent., and one man, 95 years old, one cataract, or 100 per cent., thus showing a steady rise in the per cent. of cataracts with age, which is greater in those with pathologic than in those with normal blood pressure.

These statistics further show that 79.5 per cent. of these 400 men had blood pressure between 130 and 180 mm. Hg, and the largest number of cataracts were found between these limits of pressure. For example, 79 men, between 65 and 70 years of age, had 33 cataracts, i. e., 41.8 per cent., with pressure under 160; 61 men, between the same ages, had 33 cataracts, or 54.1 per cent., with pressure above 160 mm. Hg. In other words, 61 men with pathologic pressure had the same number of cataracts that were found in 79 men with normal pressure, and the statistics also show that an increase in pressure of 41.4 mm. Hg in the pathologic over the normal class is accompanied by an increase of 17 cataracts, or 18.3 per cent. It is evident, therefore, that pathologic pressure, or the conditions which lead to it, have considerable influence in the etiology of cataract, and I can not agree with the statements of Fraenkel and Garipuy that it does not.

In my service in the eye department of the hospital at the National Military Home, near this city, abundant opportunities are offered for observing the association of these conditions, and it has been my privilege to conduct the examinations which form the basis of this paper in that great field. It is believed that their value is greatly enhanced by the fact that they have been compiled by a single observer and his assistant, from men of the same class, of the same general age, living under uniform conditions as to diet, hours of sleep, amount of exercise, and surrounded by the same temptations as to drinking and other vices, but at the same time subject to parental military control.

More than 6,000 men, 60 years of age and over, with an average age of 67.72 years, have been available for the purpose.[4] Only such have been accepted, however, as have been able to walk to the clinic for eye and ear treatment and as I have been able to examine in the limited time at my disposal. No selection of cases

* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. Oliver: A study of 3,436 cataracts operated by the staff of Wills Eye Hospital, Philadelphia, Trans. Am. Ophthal. Soc., xi, Part I.
2. Norris and Oliver's System of Diseases of the Eye, iv, 324.
3. Id., 289.
4. Annual Report of Board of Managers National Military Homes, 1907.

has been made, but no one has been accepted for the examination unless a satisfactory view of the lens, blood vessels and details of the fundus could be had in one or both eyes. (This has excluded all mature and advanced immature cataracts of both eyes.)

To this end one or two instillations of a 1 per cent. solution of homatropin has been used in every case, and the examinations have taken a wider range than for cataract alone and have included all intraocular diseases and conditions. While it is well known that cataract does not necessarily start in both eyes at the same time, as a rule it does, and when present can be detected in the lower inner one-third or one-half of the periphery in more than 95 per cent. of all cortical cases, as spokes or striæ or as masses of opacity. Magnus[5] places the per cent. at 82.69, but in my experience it has been much higher, as I have only seen cortical opacity begin in the upper one-half of the lens in three of 600 cases examined, *with a dilated pupil*. The small percentage of all kinds of cataracts which mature is well known.

The statement of Walther,[6] that "Every one becomes cataractous who does not die prematurely," seems to have some statistical support. The plausibility of the statement is strengthened if we believe that the changes in the lens which lead to cataract are degenerative, and that the changes of age are also degenerative, or the statement of Roemer that cataract is the result of direct poisoning of the cells of the lens, and if we accept the teaching of Metchnikoff that "all deaths are accidental and premature under present conditions, because of auto-poisoning by the products of intestinal decomposition," we reach a point where the inter-relation of all these conditions seems evident and their degenerative character apparent.

It seems to me that the essential, all important elements entering into the consideration of these subjects is wrapped up in their probably degenerative character, and their association together at a fairly definite period of life. When the effects of all of these influences are understood we shall know more of the etiology and pathology of age, cataract and blood pressure than we do at present.

The statement of W. J. Collins,[7] that "the cataractous process is not an exaggerated senile change, but due to disturbed nutrition of quite another nature, in so far as chemical and not morphologic changes are concerned," appeals to me as a fair statement at this time of the relation of age to cataract. The changes may be chemical or they may be morphological. They certainly amount to nutritive disturbances, and are closely related to the changes incident to age, if they are not one and the same thing. Roemer[8] has gone into the study of the subject from a different viewpoint, that of a direct poison acting on the cells of the lens, and attempts to show that cataract is probably due to the action of some cytotoxin on the protoplasm of the lens.

In relation to blood pressure itself, 200 men having so-called normal pressure, that is, under 160 mm. Hg, of the same general age, have been compared as to frequency of cataract with the same number of men having so-called pathologic pressure, that is, above 160 mm. Hg.

The examinations were made between 2 and 5 o'clock in the afternoon, with the patient in the sitting posture, the arm supported and on a level with the heart, perfect quiet of body and mind being enjoined. The Janeway sphygmomanometer was used, with 12 cm. cuff, above the elbow. Two or three tests were made in every case, and the reappearance of the radial pulse was the basis from which systolic pressure was read. As frequent reference has been made and will be made to pathologic blood pressure, it should be understood that its connection with arterial sclerosis is assumed.

Many of the statistics have been compiled from the same material which was used in a previous paper.[9] Since that time 100 more examinations have been made along the same lines, so that for the statistics of the present paper 600 examinations and 555 blood pressure records are available. The paper contains the largest number of blood pressure statistics in association with age and incipient cataract with which I am familiar. Fundus blood vessel changes of arterial sclerosis have been extensively studied abroad by Gunn and many others; at home by Allaman, de Schweinitz and Reber of Philadelphia, Friedenwald, of Baltimore, Marple of New York, and many others, but the conditions of the lens, in association with age and blood pressure, I have found only briefly referred to in journals and at considerable length in an article by Fraenkel and Garipuy.[10]

As my own studies have been along these same lines, and are so at variance with those they have presented in regard to blood pressure, it may be profitable to briefly state the conditions under which they examined 108 persons, with mature cataract, before and after operation, and compare the conclusions they reached concerning the influence of arterial tension in its etiology with those I have found in incipient cataract, but under a different standard of blood pressure, at a higher initial age and in men only. They used five standards of arterial tension as follows: (1) Very feeble tension below 101 mm., (2) feeble tension from 101 to 120 mm., (3) normal tension from 121 to 140 mm., (4) high tensions from 141 to 160 mm., (5) very high tensions above 160 mm. I have used only two standards for arterial tension, because I have not found such a refinement of tension necessary or even desirable. The whole subject is as elastic as the pressures themselves, and fine distinctions as to the exact amount of tension are not possible. We know, in a general way, that age, sex, occupation, general conditions, etc., influence blood pressure so greatly that we can speak only of certain upper and lower limits for the normal. There can be no fixed upper limit for pathologic pressure, for obvious reasons, and the lower limit must be arbitrarily fixed. However, certain standards are sufficiently constant and desirable to recommend them for general use.

I have not met with a systolic pressure below 110 mm., and the average of these 400 records is 139.6 normal and 181 mm. Hg pathologic. Fraenkel and Garipuy report that five of their elderly patients had pressure of 100 mm. and below, measured by a Laulaine's apparatus, which is similar to the Riva-Rocci. They do not so state, but a narrow cuff was probably used, which would give a higher reading than the actual pressure, which it is generally agreed can only be obtained with an armlet of 9 cm. or wider.

These authors state, "In plain figures the normal pressure never exceeds 130 mm., yet even in the normal

5. Morris and Oliver's System of Diseases of the Eye, iv, 289.
6. Walther: Id., ii, 323.
7. Ophthalmic Review, November, 1889.
8. Ophthalmic Year-Book, 1906.
9. Ophthalmology, January, 1908.
10. Studies Concerning the Arterial Tension in Cataractous Individuals, Arch. d'ophth., October, 1906.

a higher pressure may be found for a time." In my previous paper[9] I have reported the blood pressure records of 455 men above 60 years, with 130 mm. as the upper normal limit, and only had 17 cases under that standard, and only 125 cases with the upper normal limit fixed at 145 mm., and for the present paper it has been necessary to compile 555 records in order to find 200 men with blood pressure under 160 mm. Hg. It seems to me that a standard of 130 is too low for a class of elderly hospital and almshouse patients, many of whom must have been hard laborers at some period of life and sufferers from the deprivations and vices to which this class of persons are exposed, and that 160 mm. Hg is not too high an upper normal limit for them.

In reference to such a standard or upper normal limit for elderly persons, Janeway[11] says: "After 50 the average normal pressure varies from 130 to 145 mm. Hg (12 cm. cuff). Gumbrecht places it at 200 in old people, and Hansen at 170 mm. Hg (5 cm. cuff)." Other things being equal, blood pressure tends to rise higher in elderly persons than in those of middle life, just as it is higher in middle life than in childhood and youth. The reasons for this increase are self-evident if we accept the latest theories as to the pathology of arteriosclerosis and high blood pressure. They need not be considered in this connection. Fraenkel and Garipuy say further: "We also find that age does not influence arterial tension; among the 80-year-old cataractous we have found two very high tensions (160 and 161 mm.), five normal ones and one very feeble one. The same figures are found in the different parts of life." I have not found so low tensions. In 16 men between 80 and 85 years I have found 13 incipient cataracts, 3 with normal pressures 130, 150 and 155 mm., and 10 with pathologic pressure from 167.5 to 235 mm.

Again, they state that "arterial hypertension is only exceptionally found in cases of senile cataract, based on their 108 cases. In 99 uncomplicated cases we have found 80 unelevated tensions, that is, 140 mm., 10 high tensions, not more than 150 mm., and only 9 with a very high tension." They state that these figures for arterial tensions are much lower than those found by them in glaucoma, and that Méo, in 13 old men, taken at random from the hospital with arteriosclerosis, found 177 mm. to be the lowest and 230 mm. to be the highest tension.

This does not seem to be a fair statement of the facts, as the pressures are used to affirm the contention that cataractous persons do not usually have arteriosclerosis and high tension. Without stating what the condition of the lenses was in these 13 men, it is certain that more than 50 per cent. of them had incipient cataracts, and

TABLE 1.—SHOWING AGE AND INCIPIENT CATARACT, IN 200 MEN WITH BLOOD PRESSURE UNDER 160 MM.

Age.	No. of Men.	Blood Pressure. Average.	Minimum.	Maximum.	Cataracts. Cortical. No.	Nuclear. No.	Cortico Nuclear. No.	Total. No.
60	7	142.8	130	150	..	..	..	..
61	9	142.2	115	150	2	2	..	4
62	14	139.6	115	155	3	..	1	4
63	13	139.2	110	150	7	..	1	8
64	16	139.4	125	155	5	..	1	6
	59				17	2	3	22
					28.8%	3.4%	5.1%	37.3%
65	22	138.2	110	155	8	..	3	11
66	20	137.5	115	150	4	1	3	8
67	16	144.4	110	155	4	..	..	4
68	8	140.6	130	150	5	..	..	5
69	13	138.8	125	155	3	2	..	5
	79				24	3	6	33
					30.4%	3.8%	7.6%	41.8%
70	12	137.1	115	155	7	..	..	7
71	4	136.2	130	140	..	1	..	1
72	6	142.5	130	150	1	1	..	2
73	8	137.5	120	150	2	1	2	5
74	5	135.0	120	150	3	..	1	4
	35				13	3	3	19
					37.1%	8.65%	8.65%	54.3%
75	3	135.0	130	140	1	1	..	2
76	5	145.0	135	155	2	..	..	2
77	5	133.0	120	145	3	..	..	3
78	4	143.8	135	155	1	1	2	4
79	3	138.3	130	145	3	..	..	3
	20				10	2	2	14
					50.0%	10.0%	10.0%	70.0%
80	2	140.0	130	150	1	..	1	2
81	..	....	...	...	..	..	..	..
82	..	....	...	...	..	..	..	..
83	2	142.5	135	150	1	..	..	1
84	..	....	...	...	..	..	..	..
	4				2	..	1	3
					50.0%		25.0%	75.0%
85	2	147.5	145	150	1	..	1	2
87	..	....	...	...	..	..	..	..
94	1	150.0	...	...	..	..	..	..
95	..	....	...	...	..	..	..	..
	3				1	..	1	2
					33⅓%		33⅓%	66⅔%
Averages..		139.6	125.8	150.4				
Total					67	10	16	93
								46.5%

Average age 68.51 years for 200 men.

11 Clinical Study of Blood Pressure, p. 109.

TABLE 2.—SHOWING AGE AND INCIPIENT CATARACT IN 200 MEN WITH BLOOD PRESSURE OF 160 MM. AND OVER.

Age.	No. of Men.	Blood Pressure. Average.	Minimum.	Maximum.	Cataracts. Cortical. No.	Nuclear. No.	Cortico Nuclear. No.	Total. No.
60	8	183.8	165	220	1	..	..	1
61	7	174.3	160	190	3	..	..	3
62	17	172.9	160	210	6	1	2	9
63	13	182.3	160	250	6	..	..	6
64	12	170.8	160	200	2	2	1	5
	57				18	3	3	24
					31.6%	5.25%	5.25%	42.1%
65	16	175.3	160	240	8	..	2	10
66	7	180.7	160	210	1	1	1	3
67	17	190.9	160	300	6	..	2	8
68	13	178.8	160	200	6	1	..	7
69	8	178.8	160	250	1	4	..	5
	61				22	6	5	33
					36.1%	9.8%	8.2%	54.1%
70	18	180.0	160	220	6	..	2	8
71	6	190.0	160	255	1	1	1	3
72	10	184.5	160	230	4	1	..	5
73	5	188.0	160	215	2	2	..	4
74	5	210.0	170	260	3	1	..	4
	44				16	5	3	24
					37.2%	11.6%	7.0%	55.8%
75	8	191.3	160	280	3	..	..	3
76	3	183.3	160	200	3	..	..	3
77	6	175.3	160	210	2	2	..	4
78	3	173.3	160	180	..	2	1	3
79	2	175.0	170	180	2	..	..	2
	22				10	4	1	15
					45.4%	18.3%	4.5%	68.2%
80	4	185.0	160	220	1	1	1	3
81	1	180.0	...	...	1	..	..	1
82	2	207.5	180	235	1	..	1	2
83	4	167.5	160	175	1	..	3	4
84	1	165.0	...	...	..	..	..	..
	12				4	1	5	10
					33⅓	8⅓%	41.7%	83⅓%
85	2	172.5	170	175	..	1	1	2
87	1	170.0	...	...	..	..	1	1
94	..	....	...	...	..	...	...	..
95	1	200.0	...	...	..	..	1	1
	4				..	1	3	4
						25.0%	75.0%	100%
Averages..		181.0	162.1	215.0				
Total					70	20	20	110
								55.0%

Average age 68.55 years for 200 men.

that if they had been kept under observation, and had lived long enough, probably 25 per cent. would have developed mature cataracts.

They continue: "When referring to the properly so-called senile cataract which is not due to any lesion of the deeper membranes of the eye, nor to a general disease, among 99 individuals examined 5 had very feeble tension (100 mm. and below), 30 had feeble tension (101 to 120 mm.), 45 had normal tension (121 to 140 mm.), 10 had high tension (141 to 160 mm.), and 9 had very high tension (above 160 mm.)" I reported the blood pressure in 50 cases of mature cataract, which ranged from 130 mm. low to 210 mm. high and averaged 161.3 mm., their ages between 60 and 85 averaged 68.5 years. The urine was not examined for albumin and casts in the first 500 cases, but has been in the last 100. The examinations add nothing to our knowledge along these lines.

Finally, it is claimed by these authors, "In the foregoing pages we have reported on the results of our researches concerning the permanent arterial tension in 108 cataractous individuals examined by us; the object was to find whether the arterial tension in the cataractous was sufficiently high to consider these patients as arteriosclerotics." Later they say, "A senile cataract is not usually accompanied by arteriosclerosis." I am able, with a much higher standard, to confirm their statements that age does not materially influence arterial tension except in the general way just referred to, but I affirm, basing my opinion on these statistics, that there is a close and intimate association between arteriosclerosis, pathologic pressure and cataract.

While the proportion of cases of cataract with pathologic pressure is not as great as might be expected, in considering arterial sclerosis and high blood pressure as causes of cataract, we should not forget that the deleterious influences which these may have on the nutrition of the lens need not depend on high pressure alone, since in a certain proportion of cases high pressure is an incident in the course of and not a cause of arterial sclerosis. It is a common observation that extensive disease of the palpable vessels can exist without high pressure, and it is conceivable that the obstruction to the lumen of such vessels could seriously interfere with the nutrition of the lens in cases where arterial tension is not above the normal.

In comparing the statistics presented in Tables 1 to 4 with those given by these observers, it must be borne in mind that we have used a different instrument, a different standard for recording blood pressure, have studied different stages of cataract and different classes of persons. If the percentage of incipient cataract I have found with arteriosclerosis and hypertension is higher than that found by these observers, some of the discrepancy can be explained by assuming that old soldiers furnish a more favorable soil for the development of sclerotic or connective tissue processes, than the class examined by them, but a large part of the discrepancy can not be so explained, but must be charged to the process of reasoning which enables different observers to reach different conclusions from the same observed state of facts. These blood pressure statistics are in harmony with the observations of the best authorities along this line of study.

It may be of interest to state, in closing, and is germane to the subject, that I have in the past four months furnished about 250 cataractous lenses, from men above 60 years of age, to Prof. W. H. Howell of the Johns Hopkins physiologic laboratory, Baltimore, from the collection of such lenses in the National Military Home Hospital. Mr. Burge, working under the direction of Professor Howell, has found that "there is a marked decrease in the potassium and a corresponding increase in the calcium salts of the ash of such lenses." The work is not far enough advanced to reach any definite conclusion. I have Professor Howell's permission, however, to report this observation in advance of publication, for whatever it may prove to be worth. A full report will appear later in his laboratory bulletin. Mr. Burge's observation of the preponderance of the lime salts in such lenses suggests that the increase in these salts may be general throughout the body and may have some influence also in bringing about some of the processes which lead to aging and arteriosclerosis. The idea, I believe, has long been entertained that calcareous degeneration is one of the ultimate terminations of connective tissue proliferation in the arteries and perhaps in other tissues and organs.

TABLE 3.—SHOWING BLOOD PRESSURE WITH AGE AND CATARACT.

Blood Pressure.	No. of Men.	Age. Average.	Age. Minimum.	Age. Maximum.	Cataracts. Cortical. No.	Cataracts. Nuclear. No.	Cataracts. Cort.-Nucl. No.	Cataracts. Total. No.
110	4	65.5	63	67	1	..	..	1
115	4	64.8	61	70	1	..	..	1
120	6	71.0	65	77	4	..	..	4
125	5	65.6	62	69	2	..	..	2
130	36	68.4	60	80	11	3	2	16
135	21	69.3	61	83	4	2	3	9
140	45	66.9	60	79	17	1	5	23
145	18	70.3	63	85	5	2	3	10
150	51	67.3	60	94	21	2	2	25
155	10	68.2	62	78	1	..	1	2
	200				67	10	16	93
160	43	68.9	61	83	16	7	3	26
165	10	68.8	60	84	4	1	1	6
170	38	68.1	60	87	10	6	6	22
175	13	68.8	60	85	7	1	2	10
180	32	69.3	61	82	9	2	2	13
185	4	67.2	61	73	..	1	..	1
190	21	70.5	60	76	7	1	2	10
195	1	71.0	..	..	..	..	..	..
200	13	71.8	64	95	6	..	3	9
205	3	70.0	63	75	1	..	..	1
210	5	68.6	62	77	2	..	1	3
215	2	71.5	70	73	2	..	..	2
220	5	70.2	60	80	1	..	..	1
225	..	..	..	..	..	..	..	..
230	2	69.5	67	72	1	..	..	1
235	1	82.0	..	..	1	..	..	1
240	1	65.0	..	..	..	..	..	..
245	..	..	..	..	..	..	..	..
250	2	66.0	63	69	1	1	..	2
255	1	71.0	..	..	..	..	..	..
260	1	74.0	..	..	..	..	..	..
280	1	75.0	..	..	1	..	..	1
300	1	67.0	..	..	1	..	..	1
	200				70	20	20	110

TABLE 4.—SHOWING CATARACT WITH AGE AND BLOOD PRESSURE.

Cataract. Kind.	No.	Age. Average.	Age. Min.	Age. Max.	Blood-Pressure. Average.	Blood-Pressure. Min.	Blood-Pressure. Max.
Cortical	67	68.9	61	85	138.5	110	155
Nuclear	10	69.5	61	78	139.0	130	150
Cort.-Nucl.	16	70.2	62	85	140.9	130	155
	93						
Cortical	70	68.9	60	83	183.8	160	300
Nuclear	20	71.9	62	85	173.3	160	250
Cort.-Nucl.	20	74.3	62	95	178.3	160	210
	110						

My thanks are due to Col. W. E. Elwell of New York, inspector-general and chief surgeon of the National Military Homes for permission to use the material for the paper. I am under renewed obligations to Maj. F. W. Rousb, surgeon, for his cooperation in the work, which is respectfully acknowledged. My assistant, Dr. A. W. Bartell, of the medical staff, has given me valuable aid and assistance in the last 100 cases examined. Dr. J. W. Millette of this city, my assistant in St. Elizabeth's Hospital, has compiled practically all of these statistical

tables, and it is a pleasure to acknowledge that whatever of value they may have, in throwing light on the subjects of the paper, is due to the thorough manner in which he has presented the statistics by the above tables.

DISCUSSION.

DR. W. B. MARPLE, New York: On studying Dr. Greene's figures and some of my own, I could not escape the conviction that if there was any connection between senile lens changes and pathologic blood pressure it was not very apparent. It is very probable that if there was an intimate connection of this character we should have a harmony in our figures in the different decades or half-decades. Dr. Greene's figures on patients between 60 and 70 years show a larger percentage of cataracts among the patients with pathologic than among those with normal blood pressure, yet evidence of such connection is surely not very apparent among the patients between 70 and 80. In fact, among about the same number of patients between 75 and 80, those with normal blood pressure show a slightly higher percentage of cataracts than those with high pressures. My assistant, Dr. Krug, has recently examined one hundred cases among the patients between 60 and 80 years of age in the almshouse on Blackwell's Island, New York, having all the conditions as nearly as possible like those described by Dr. Greene. The patients were about equally divided between the two sexes. In each patient two observations of blood pressure on consecutive days were made, and the average of the two was taken. I can vouch for the carefulness with which the work was done. A careful study of these tables does not reveal any conspicuous difference. In the percentage of cataracts in the two cases and in some of the decades it appeared as though there was a higher percentage of cataracts among the patients with normal than among those with high pressure, as was the case also in some of Dr. Greene's tables. In all the decades the percentage of cataracts was 64 for the normal and 70 for the high pressure, but the number, 101 in all, was too small, as I consider Dr. Greene's numbers also too small, to warrant the formulation of any very definite ratio. In the higher decades the number of patients with high pressure was larger than of those with normal pressure. Dr. Greene may be on the right track, but it will need larger statistics to show to what extent high blood pressure becomes a factor in the causation of cataract.

Fraenkel and Garipuy bring out one point of real value in the possible connection between arterial hypertension and spontaneous intraocular hemorrhages which follow a cataract extraction. In forty-two cases with normal tension these observers had one hemorrhage (of the anterior segment), while in ten cases with very high tensions in which operation was performed they had three intraocular hemorrhages, one an expulsive one. In the case of expulsive hemorrhage the tension was found to be much higher than in the cases of hemorrhages in the anterior segment. Fraenkel and Garipuy say that if the examination of the cataract patient shows very high tension therapeutic measures should be employed before operating to reduce this tension and to maintain it at as nearly a normal degree as possible until healing is complete. In this way we may try to avoid the expulsive hemorrhage, which is the worst complication of this operation, and also the hemorrhages of the anterior segment which sometimes reduce a favorable result which we thought assured.

DR. EDWARD JACKSON, Denver: I think that so far as the present reported investigations point to a conclusion they point distinctly to an absence of any direct connection between increased blood pressure and cataract. The first table shows a very distinct connection between age and the occurrence of incipient cataract; in every five-year period a distinct increase. We must remember that there is a distinct increase in blood pressure with age. That is shown by all statistics. Taking that fact and Table 3, we find that with increase from 110 to 300 mm. there is no regular increase in the number of incipient cataracts. If we make allowance for the fact that the high blood pressures occur with the greater ages and in persons with senile changes, in whom incipient cataract is also more common, I think that the table indicates that there is no other connection.

DR. R. D. GIBSON, Youngstown, Ohio: I visited the Soldiers' Home in Dayton a month ago and was impressed with the army of old men Dr. Greene has there to deal with—something like seven thousand. It is very fortunate that the opportunities are being put to use. Eighteen years ago Dr. Knapp, of New York, made the remark that we find senile cataract in one person in every three who attains the age of 70.

DR. LEARTUS CONNOR, Detroit: It is unfortunate that conditions under which the observations were made did not permit of inquiry into the cause of this blood pressure, also that other conditions associated with the formation of cataract have not been eliminated. The effect which blood pressure has on disturbances of metabolism in these patients is still undemonstrated. All observations come from those with whom the battle of life went badly; those in the poorhouse, and the old soldiers, whose nervous and nutritive systems had been badly disturbed. Before we can come to any definite conclusions we must know what changes the blood pressure makes in metabolism in different tissues of the body.

DR. G. F. KEIPER, Lafayette, Ind.: If blood pressure be responsible for incipient cataract then we ought to see more cataracts in younger subjects than we do because angiosclerosis is not confined to old people by any means, but occurs at any age, as any one may demonstrate for himself by means of the sphygmomanometer. There must be something else to account for cataract; this may be one of the contributory causes. A number of these lenses have been examined and there was found a marked decrease in the potassium salts and a corresponding increase in the calcium salts, which would seem to indicate other causes than blood pressure.

DR. OSCAR WILKINSON, Washington: In my opinion there is no branch of ophthalmology so neglected and no class of cases so ignored by the oculist as those with incipient cataract. It is the rule to say, "You have an incipient cataract; it may never bother you, but, if it does, come back and we will operate." That seems to be ignoring a pathologic condition that in any other part of the eye we would attack with the energy it deserves. I think that Dr. Risley sounded the keynote in regard to this condition when he said that it was not due to old age and the natural consequences of old age, but was a process that should be studied and treated, and I think that Dr. Greene is doing a great good. I have for years been working along this line myself and have come to the conclusion that when we pay attention to the processes of elimination and the proper correction of errors of refraction in these cases we can at least postpone the condition.

We all know that in a great many cases lenticular opacities increase rapidly. Patients will come with vision of 6/6, with partial opacity, and in three months will have lost as much as one-third of the vision. It would be interesting to know whether these gentlemen who have had the opportunity of studying the blood pressure have investigated it in relation to the rapidly forming lenticular opacity.

DR. J. L. THOMPSON, Indianapolis: How are we to explain or account for any opacity at the lower inner margin of the lens and in no other part of the body which remains stationary for twenty or thirty years and never results in complete opacity? I have numerous pencil sketches of this peculiar form of lens opacity in said region. I never tell a patient about it except when other parts of the lens are affected.

DR. D. W. GREENE, Dayton, Ohio: Up to the present time only the surgeon and the internist have availed themselves to any extent of the valuable lessons to be drawn from sphygmomanometric records. The fundus blood vessel changes of arteriosclerosis have been extensively studied by oculists, but so far comparatively little attention has been given to the cornea, uvea, lens, vitreous and intraocular tension in connection with arterial sclerosis and blood pressure. The plea of the paper has been for a wider and fuller study along these lines, limited in this paper to the condition of the lens under so-called normal and pathologic blood pressure.

I did not refer to the observation of Fraenkel and Garipuy of which Dr. Marple speaks, but I am glad that he has called attention to so important a matter as intraocular hemorrhage in connection with blood pressure. Permit me to digress long enough to call your attention to a matter of equal importance, the association of high blood pressure (as I have repeatedly observed) with delayed healing of cataract wounds, caused in my judgment, by the plus tension so often associated with it.

I wish to call Dr. Marple's and Dr. Jackson's attention to a few figures on page 165, showing 79.5 per cent. of these four hundred men with blood pressure between 130 and 180 mm. Hg; and the largest number of cataracts were found between these limits of pressure. For example, seventy-nine men between 65 and 70 years of age had thirty-three cataracts, 41.8 per cent. with pressure under 160; sixty-one men between the same ages had thirty-three cataracts, or 54.1 per cent., with pressure above 160 mm. Hg. In other words sixty-one men with pathologic pressure had the same number of cataracts that were found in seventy-nine men with normal pressure, which shows an increase of 29.4 per cent. in the pathologic over the normal class. These statistics also show that two hundred men with an average blood pressure of 139.7 mm. Hg. had ninety-three cataracts, while two hundred other men with an average blood pressure of 181 mm. Hg had one hundred and ten cataracts, showing that an increase in blood pressure of 41.4 mm. Hg was accompanied by a corresponding increase of seventeen cataracts. Seventeen being 18.5 per cent of ninety-three, the increase of cataract in those having pathologic over those having normal blood pressure is therefore 18.3 per cent., as already stated. This percentage is too high to be a mere coincidence, and although I do not pretend to say what its total significance is, I think that it shows that pathologic blood pressure or the condition back of it has considerable influence in the causation of cataract. It is hardly fair to interpret the statistics by decades and half decades because of the few men in each. The value of the statistics is in the correct handling of the figures.

It is not intended to imply anywhere in this paper, that arterial sclerosis or high blood pressure are primary conditions in the causation of cataract. It is too soon to make any such statement. My only purpose has been to present statistics showing their association. The causes and pathologic significance of arteriosclerosis and high blood pressure and even lens opacity itself must still be regarded as *sub judice*.

Clinical Notes

PERFORATING GASTRIC ULCER,

WITH REMARKS ON DIAGNOSIS AND TREATMENT.

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The following case will furnish the text for some observations which seem appropriate in the light of this experience:

History.—E. L. C., 62 years old, had had attacks of "indigestion" for many years. He sought no medical advice for these attacks of stomach trouble except on one occasion in the fall of last year, when he was put on a liquid diet for about ten days; then, the symptoms subsiding, all restrictions were removed and he felt comfortable until about May 16, 1908. He was visiting in Chicago at this time, and attributed the return of his gastric distress to indulgence in Chinese restaurant meals. He described the trouble as a heartburn, accompanied by belching and some distress in the epigastrium during the height of digestion. He never vomited in any of the attacks, nor did he ever have any pain shortly after eating. There was no history of melena. He had no tender spots in the epigastrium or in the back. He did not consult anyone about his last attack until he was taken suddenly with a very severe pain in the right hypochondrium on the night of May 19, 1908. This pain was paroxysmal and radiated to the right shoulder. He vomited several times during the attack. The temperature and pulse were normal. He was not collapsed at the time of my visit, which was about half an hour after the onset. From the history of the indigestion and the character, location and distribution of the pain, a diagnosis of probable gallstone colic was made and one-half grain of morphia given hypodermically, after which the patient became tolerably comfortable and rested so until morning, when examination showed some tenderness in the right hypochondriac region and over the appendix. Rigidity of the right rectus and increased tenderness over the appendix were added as the day wore on, until the question arose whether it was not a case of gangrenous appendicitis from the start. The liver dulness was not obliterated, but fever and increase in the pulse rate appeared, and the patient was taken to the Lutheran Hospital for exploratory laparotomy just twenty-four hours after the pain began.

Operation.—The incision was made in the right rectus opposite the umbilicus, so that it might conveniently be extended up or down as seemed necessary. The appendix was found firmly adherent and some free pus seen in the abdominal cavity. This led to the opinion that the appendix was probably entirely at fault, and it was removed; but not until the appendix was entirely delivered was it seen that no perforation existed in it and that it was not accountable for the free pus. The reason that it could not be examined before removal was that on account of the adhesions the base had first to be ligated and severed from the cecum, and then the adhesions and mesentery tied and separated down to the tip. When the tip came into view there was to be found no evidence of acute trouble; so the incision was enlarged upward and the gall bladder palpated without result. Then the pylorus was examined and some plastic lymph found on its anterior surface, while the intestine in the neighborhood showed evidences of inflammation. While the examination was in progress, some greenish grumous fluid was seen to escape from a small opening, about the size of a lead pencil, located in an indurated area two inches in diameter on the anterior surface near the gastrohepatic omentum. Several Lembert stitches were taken with great difficulty on account of the inaccessibility of the ulcer, and the opening was closed. The pylorus seemed to have been narrowed considerably by the stitches, and the question of gastroenterostomy came up, but was decided negatively on account of the length of time the patient had already been on the table and the necessity for operating in the presence of an established peritonitis. Then, again, it was evident that the pylorus still had an opening, and it was thought best to wait for recovery and do a gastroenterostomy later if required.

Subsequent Course.—This was uneventful. The patient did not vomit again. Nothing was given by the mouth for five days, but he had three pints of water by the rectum each twenty-four hours, which was retained. Then water was cautiously given by the mouth, gradually increasing in quantity until the rectal injections were dispensed with and a liquid diet slowly reached. The patient had no return of his indigestion or any stomach distress whatever. Nine weeks after the operation he is on a rather liberal diet, including fish, white meats, cereals, eggs and milk, without any symptoms of gastric retention or pyloric obstruction.

The points in the case to which I desire to draw particular attention are the impossibility of differentiating the primary attack of pain from that of biliary colic, and the close resemblance of the symptoms presented twelve hours later to those of appendicitis. If this resemblance had not been present there might have been time for a gastroenterostomy had it been thought advisable to make it, but the finding of an adherent appendix led to its removal, which proved difficult and time-consuming on account of the old adhesions.

At the present time it seems that the course pursued in regard to the gastroenterostomy was wisest, for the patient has no pyloric obstruction, and an additional operation would have decreased his chances materially and unnecessarily

During the colic the history of stomach trouble, taken in connection with the sudden onset of paroxysmal pain radiating to the scapula and shoulder and the persistence of liver dulness, made a perfect picture of biliary colic.

It seems to me impossible in a similar case to be sure of one's diagnosis before operation, but safety appears to lie in the recognition of the necessity for immediate laparotomy, which fortunately can be early determined, the exact anatomic diagnosis being completed with the abdomen opened.

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A CASE OF TYPHOID SPINE.*

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NEW YORK CITY.

History.—G. L., aged 56, had on July 14, 1907, what he terms a chill. The following week he did not feel very well, but continued his work, that of a bank teller. On July 24 he was taken to the nearest hospital suffering from a well-defined attack of typhoid fever. Cold sponge baths were given whenever the temperature rose above 102. These were continued for three weeks; then pneumonia developed. The lower lobes of both lungs were involved. Resolution followed in due course and the patient returned to his home three weeks later, having remained in the hospital for six weeks. His general weakness and disability were not more marked at this time than would have been expected. Three weeks after returning home he was able to get about fairly well, but always complained of stiffness in his back. Walking up or down stairs caused pain in the back, which was somewhat general, but more especially referable to the lower left dorsal region. An unsuccessful attempt was made to resume business. The pain gradually grew more severe. Massage and active and passive motion were advised, from which soon resulted an accentuation of the symptoms. Early in November jaundice developed. This quickly responded to treatment and within a week had entirely disappeared. The patient has had no second attack. In December steam baths were given, the after-effect of which was to depress and weaken the patient. The acute exacerbations of pain were now so severe at times that the administration of morphin was necessary. The actual cautery was used with slight temporary relief. Adhesive-plaster strapping was followed with better results, though administration of morphin had still to be resorted to. On Jan. 9, 1908, the case was referred to me by Dr. A. H. Moore of New Rochelle. At this time the symptoms of pain and distress were much accentuated. The slightest movement in bed caused a sharp shooting pain in the back, radiating toward the abdomen. Even the raising of an arm from the bed would cause a painful spasm. The patient also complained of marked tenderness over the costosternal junction of the sixth rib on the right side. Though a well-nourished man and of a naturally phlegmatic temperament, he was extremely nervous, and at times inclined to be hysterical. This was most noticeable when recounting the history of his illness, and especially when describing the pain. He wore a haggard, anxious look, which was not relieved between the painful spasms, but was exaggerated at these times.

Examination.—This showed a small but distinctly marked kyphosis of the seventh dorsal spine. To the left of this, of the size of the palm of the hand, was a hypersensitive area which was exceedingly tender on pressure. On either side of the spinous processes, in the dorsal region, there was marked hypersensitiveness and some swelling; a right dorsal curvature was also present. An enlargement of the sixth rib over the area complained of in front was distinctly palpable. This was quite painful on pressure. Breathing was painful. Knee-jerks were exaggerated. Temperature was but half a degree above normal and pulse was 110.

Treatment.—It was not advisable to apply a plaster-of-Paris jacket because of the severity of the pain the application of the jacket would involve. A plaster-of-Paris bed was made. This included the thighs and extended upward, including the neck and shoulders. It was retained in place by a plaster-of-Paris bandage below and a muslin bandage above over the thorax. This bed was applied on January 11, from which time the patient began to improve. No morphin was afterward administered, and though the patient was very nervous for the following week, there were none of the severe attacks of pain previously noted. On January 28 the patient was allowed to sit up for half an hour. No ill effects followed and he was up every day after this date. After getting up he complained of stiffness in the knees. This was at first quite a distressing symptom, as was also stiffness in the shoulder joints. The latter disappeared; the former was still a subject of complaint at times to a slight extent, especially after the patient had remained seated for some time. On Feb. 6, 1908, the plaster-of-Paris bed was replaced by a plaster-of-Paris spinal brace. This was made six inches wide, extending from the spine of the first dorsal vertebra to the tip of the coccyx, and having a pelvic band of steel and an apron and shoulder straps such as used with the Taylor brace. This was worn day and night for the succeeding two months, being removed but once a day to allow the back to be sponged and powdered. An unsuccessful attempt was made to isolate the typhoid bacillus from the urine and feces, though it was not expected that we should find any at this time.

Later History.—On March 20 the patient returned to his place of business, remaining for one hour. From March 27 he was actively engaged in business. He had no pain whatever, but walked with a slight scoliosis, which he said was noticeable before his present illness, the right shoulder being higher than the left, as he expressed it. There was still some slight tenderness anteriorly over the sixth costosternal articulation. The kyphosis was still perceptible, but much less prominent and distinct. The knee-jerks were slightly accentuated. The general condition was much better than it was previous to the onset of the fever in July. The plaster-of-Paris spinal brace was still being worn during the day.

This case is of particular interest because of the age of the patient and of the severity of his symptoms, in addition to the presence of a kyphosis denoting bone change. It also accentuates the importance of perfect immobilization, as has been so well emphasized by earlier writers.

125 West Fifty-eighth Street.

* Read before the Orthopedic Section, New York Academy of Medicine, April 17, 1908.

APPARATUS FOR CONTINUOUS SALINE ENEMAS IN PERITONITIS.

D. N. EISENDRATH, M.D.

CHICAGO.

Two of the chief factors in reducing the mortality after operations for general peritonitis have been the use of the Fowler position and the continuous rectal administration of salt solution as suggested by Dr. J. B. Murphy. One of the most difficult problems in connection with the use of salt solution per rectum has been to maintain it at a constant temperature. The usual custom is to surround a glass percolator with hot-water bags, which latter must be refilled frequently. I have devised a simple and inexpensive apparatus by which a constant temperature can be maintained either by the use of electricity or of an alcohol lamp or small Bunsen burner, and this has been employed in a number of cases at the Michael Reese Hospital.

It has seemed desirable to construct the apparatus so that either electricity or some other form of heat (gas or alcohol lamp) could be employed. It is designed on

the plan of the filters which are used in bacteriologic laboratories for filtering agar agar. It is made of tin and consists of a double-walled water jacket (C) mounted on legs eight inches in height. The space within the jacket is conical and just large enough to hold a glass percolator with a capacity of one quart.

Rubber tubing is attached to the lower end of the percolator and connected with an ordinary rectal tube. The flow is regulated by a special screw cock in such a manner that a drop per second escapes into the rectum. It is possible for the patient to absorb ten pints in twenty-four hours. The lower level of the water should be eight inches higher than the bed so as to permit a

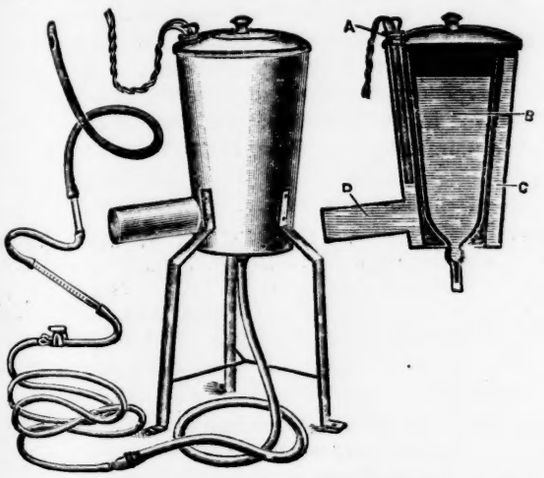

Fig. 1.—Apparatus for continuous saline enemas in peritonitis. A, thermophore; B, saline solution; C, water jacket; D, projection for heating the water over gas or alcohol flame.

continuous flow. If electricity be employed as a source of heat, a special thermophore A is used, which is inserted directly into the percolator B and maintains a constant temperature of 120 F., so that, allowing for an unavoidable loss of heat, the salt solution flows into the rectum at a temperature of 95 to 100 F. The cut incorrectly shows this thermophore inserted into the outer chamber. If gas or an alcohol lamp is employed (as might be necessary in private residences) the water in the outer chamber C is heated at the projection D.

103 State Street.

Therapeutics

SYPHILIS.

Dr. James Pedersen, New York, in the *Vermont Medical Monthly,* May, 1908, discusses the diagnosis and treatment of this disease. He divides the disease, as the patient first presents himself to the physician, into four groups: "In the first there is a sore, in the second a sore and an eruption, in the third either an eruption or a sore throat or both, and in the fourth there is nothing visible and, perhaps, nothing palpable. These groups are arranged in the order of their relative frequency of occurrence." Unfortunately for both physician and patient, "the typical Hunterian chancre is only found in the minority of cases." In the majority of patients the ulceration, chancre, or new growth, presents many non-typical signs. Pedersen believes that "every lesion on or about the genitals, occurring within seventy days after an opportunity for infection, may be a point of syphilitic inoculation." He also believes that "every genital ulcer, however simple or however serious, should be regarded as the possible site of a mixed infection." Such suspicious ulcers should not be cauterized unless the ulceration tends to spread rapidly or to erode. In doubtful cases the physician should express the probabilities to the patient, but mercurial treatment should be withheld "until the secretion from the ulcer has shown the *Spirochæta pallida* or until enlarged inguinal glands, eruption or mucous patches in the throat have appeared." Pedersen does not believe that too much value should be placed "on the enlargement of the epitrochlear and axillary glands, especially in patients doing work that exposes the hands to frequent trauma."

While many writers on this subject believe that specific treatment should not be begun until the first eruption appears, Pedersen thinks that a doubtful case may be diagnosed and the treatment begun "when such symptoms as lassitude, headache, fever and nocturnal bone pain occur in such suspected patients." Such patients may have albuminuria and enlarged spleen, he states. It would seem generally advisable, however, in order to obtain the continued cooperation of the patient for the number of years that he must be treated, that, except in rare instances, specific treatment should not be begun until the first secondary symptoms are in evidence.

Pedersen emphasizes the great importance of general hygienic treatment in conjunction with the administration of the necessary drugs. In doubtful cases he would begin the preparation of the patient, if possible, by giving a vacation in which he spends his whole energies in improving his general health. Such a preparation of the patient, unfortunately, would ordinarily be difficult to institute. It should be emphasized, however, that, as Pedersen states, a nutritious, simple diet, total abstinence from alcohol and tobacco, a proper amount of fresh air and a proper amount of physical exercise are essential to the tolerance of the disease and the mercury.

Cauterization of the initial sore should be avoided, if possible, until the diagnosis has been established. Also no mercurial dressings should be applied until such a diagnosis has been made. Ordinarily cleanliness and protection and other antiseptics than mercury may be used. If the diagnosis is positive, cauterization may be done, but not frequently, and some mild mercurial dressing may then be applied. But whatever the dressing, it should not be irritant lest it cause inflammation of the surrounding tissues. If the chancre is syphilitic, when it is deemed best to administer mercury internally, it will rapidly heal without local mercurial applications.

During the mercurial treatment the patient should drink plenty of water to promote the activity of all the organs of excretion. The mercury will probably soon cause sufficient or even perhaps too frequent movements of the bowels. The care of the mouth, teeth and gums is important, and the patient can not be too carefully instructed in this matter. Any alkaline wash, or, if there are any erosions, peroxid of hydrogen applications, or a mouth wash of alcohol one part and water three parts, or a potassium chlorate mouth wash, and occasionally tannic acid washes and gargles are useful. Ulcerations in the mouth and throat will often heal rapidly after one or two applications of a 25 per cent. solution of nitrate of silver. Without ulceration in the mouth and throat the mucous membrane may be kept healthy by a thorough cleaning of the teeth two or three times daily, and the cleansing of the mouth and throat with alkaline solutions as represented by the following.

℞. c.c.
Liquoris antiseptici alkalini (N. F.).....500 | or Oi
Sig.: Dilute with equal part of warm water and use three times daily as a mouth wash.

If there is simply a general redness and soreness of the mouth and gums, there is no application more soothing than potassium chlorate solution, as:

℞. gm. or c.c.
Potassii chloratis ..... 25 | or ʒi
Aquæ ..... 500 | Oi
M. et sig.: Use, undiluted, as a mouth wash or gargle, two or three times a day.

If there is any purulent condition of the mouth or gums, or any cavities of the teeth that can not be attended to immediately by a dentist (who should be told what disease the patient has for his own protection and that of the rest of his clientele), a dilute solution of peroxid of hydrogen makes the best cleansing mouth wash, as:

℞. c.c.
Aquæ hydrogenii dioxidi.....250 | or Oss
Sig.: Dilute with four parts of warm water and use, three times daily, as a mouth wash.

Directly after using a peroxid solution the mouth should be cleansed with plain water or, better, an alkaline solution, as the above.

If it is thought best to use a tannic acid solution to cause a flabby mucous membrane to become more healthy, it may be used as follows:

℞. gm. or c.c.
Acidi tannici ..... 5 | ʒiss
Glycerini ..... 10 | or fl ʒiii
Aquæ, ad ..... 200 | ad fl ʒvi
M. et sig.: Use, undiluted, as a mouth wash or gargle, three or four times a day.

The patient should be thoroughly instructed as to the danger of his infecting others and the manner of such infection, as by napkins, towels, drinking cups, spoons, forks, or kissing. Such instructions should be most explicitly given if there are mucous patches in the throat.

There is as yet no serum treatment for syphilis, and there is no medicinal treatment whose success is at all comparable to that of mercury and an iodid. Probably the most frequent forms of mercury used internally are the protiodid (the green or yellow iodid), the biniodid (the red iodid), the bichlorid (corrosive sublimate), calomel, and blue mass, and the frequency of their use is probably in the order named. For inunction the blue ointment or the oleate may be used, and for hypodermatic administration Pedersen says that four forms of mercury are available: the bichlorid, the salicylate, the biniodid, and the mild chlorid (calomel). Mercurial fumigation should rarely, if ever, be done, as the amount that may be absorbed is beyond regulation and sufficient may be taken into the system to cause serious symptoms.

Hypodermatic administration is used when the disease must be gotten under immediate control, when the lesions are likely to become serious, as eroding ulcerations with perhaps palate perforations, or nasal perforations, or symptoms showing that gummata are forming in the central nervous system or elsewhere, or when inunctions are inadequate and medication by the mouth causes uncontrollable gastrointestinal disturbances. In rare instances hypodermatic medication may be used when it is necessary that the patient's family should not know that he is receiving medication. Some physicians advocate the hypodermatic administration of mercury in every case of syphilis; the majority of physicians, however, have not adopted it. The advantages are that the patient comes more quickly under the influence of the drug, and one injection gives sufficient mercury for absorption to last a number of days (from five to seven), this infrequency when the symptoms are not serious. The disadvantage, and the reason that it is generally not selected by physicians, is the discomfort that it almost invariably causes. An all-glass syringe with a needle at least two inches long is used and the injection is generally made deeply into the gluteal muscles. Pedersen recommends as preferable for this purpose a bichlorid of mercury solution of the strength of 1/8 of a grain in 5 minims. This strength allows the physician to run up the dose from 5 to 10 minims, the capacity of an ordinary hypodermic syringe, allowing sufficient dilution. Hypodermic tablets of corrosive sublimate may be dissolved in sterile water at the time of the injection, or, as recommended, the following solution may be used:

℞. gm. or c.c.
Hydrargyri chloridi corrosivi..... | .625 gr. xii
Aquæ destillatæ ..... 25 | or fl ʒi
M. et sig.: Corrosive sublimate for hypodermic use.
[Each .30 c.c. = .008 gm.] [Each 5 m. = 1/8 gr.]

Sometimes the salicylate of mercury is preferred, and this may be suspended in an oil. The dose is from 3/4 of a grain (.045 gm.) up. This salt does not cause pain after injection.

The injection treatment of syphilis was further discussed in THE JOURNAL, July, 27, 1907, page 339. Dr. William S. Gottheil's article in THE JOURNAL for August 3, 1907, page 365, should also be referred to. The intravenous treatment of syphilis was discussed by Dr. G. Frank Lydston in THE JOURNAL, Nov. 16, 1907, page 1662.

The yellow iodid, or the red iodid, or the bichlorid of mercury, are the best salts of mercury for internal administration. The dose should begin small and gradually increase to the point of tolerance, unless before such a dose is reached the local lesions begin to disappear.

The teeth and gums should be carefully watched, and while it may be necessary to cause a little tenderness of the gums, stomatitis should not be allowed to develop except, perhaps, unavoidably in unexpected cases of idiosyncrasy to mercury. If nausea and vomiting, or diarrhea occur, the mercury must be stopped and some astringent iron administered. A slight looseness of the bowels may be tolerated. Sometimes it is advisable for a short period, until tolerance to mercury is acquired, to give a small daily dose of opium or morphin, as perhaps 1/10 of a grain of morphin once or, at most, twice a day. Such should not be long continued, and it rarely is necessary. It is also generally advisable, at least in the early months of the treatment, to give some iron daily, either as Blaud pill or reduced iron tablet, in a dose of 3 grains, three times a day, after meals. Whether or not a bitter tonic is needed depends on the appetite of the patient. During all the early stages of syphilis the patient should be encouraged and his fears of future usefulness, or permanent or transmittable disease, quieted.

If it is deemed best to give the mercury by inunction the oleate is perhaps the best preparation, and a small amount, from the size of a pea to the size of a hazelnut may be rubbed into different parts of the body. This should generally be done daily, then every other day, and

later every third day. The patient should first prepare the part, and this had best be the inside of the thigh or the inside of the upper arm, or the side of the abdomen, and the parts used should be alternated and the round made from one part to the next in regular series. The skin should first be washed with soap and water, then dried, and then the oleate rubbed in. As soon as it is thoroughly rubbed in the part may be covered with a piece of flannel pinned to the underclothing. This allows absorption to continue and prevents staining the clothing. At least twice a week the patient should have a good hot bath, and, in fact, a patient under any continuous administration of mercury should have tub baths at least twice a week.

The length of time mercury should be given before the dose be reduced or when it may be intermitted, or whether or not it should be administered for the whole period of three years, is a subject still open to discussion. Pedersen does not state when a dose found sufficient should be diminished, but he does believe that the mercury should be given, or at least the treatment, for three years.

The question as to when an iodid should be given, or how long, or whether an iodid and mercury should be administered simultaneously, or when an iodid may be substituted for the mercury, is again a subject open for discussion. As Pedersen well shows, no hard and fast rule can be laid down for the administration of an iodid, but he advises that a squamous or a tubercular syphilide should call for both mercury and iodid of potassium treatment. Also when there is gummatous formation he believes the mixed treatment should be given. It is still a question whether, with no symptoms present, mercury should be continued through the three years or whether iodid should be substituted. It is also not positively demonstrated that mercury having long been administered may not remain deposited in different parts of the body, and doses of iodid given continuously may liberate such deposited mercury. In other words, the patient may possibly be still undergoing the action of mercury, although no fresh mercury is at this time administered. It seems advisable, however, with definite syphilitic manifestations, even with definite secondary, especially tertiary manifestations of syphilis, to use the mixed treatment. The patient is thus given every chance of the lesion becoming healed.

While the iodid of potassium is the salt most generally used, the sodium iodid is perhaps preferable, since the sodium element is not as debilitating to muscle tissue as is the potassium. This is especially true of the cardiac muscle. Hence when large doses must be given, or when the dosage must be prolonged, the iodid of sodium should be preferred. This salt also sometimes seems less likely to disturb the stomach.

The symptoms of iodism should be avoided if possible. These symptoms are coryza, frontal headache, reddening of the eyelids, a strong, metallic taste in the mouth, sometimes a profuse flow of saliva and gastric indigestion. It is unimportant whether the iodid is ordered largely diluted or in saturated solution, but it should never be ordered in any syrupy, nasty mixture. It is preferably administered in milk or in an alkaline water. It is generally best administered after a meal, theoretically best an hour after meals, as it slightly inhibits digestion. When an iodid is administered the yellow iodid, i. e., the protoiodid, of mercury should not be the salt selected for simultaneous administration, as it is likely to be chemically changed into the biniodid (red iodid) of mercury, which salt would then be present in a poisonous quantity. The following prescriptions may be used:

℞.

	gm.	
Sodii iodidi	25	
Aquæ destillatæ, q. s. ad saturandum	q. s. ad	sat. or ℥i

M. et sig.: Five drops with milk or water, three times a day, after meals.

Each drop of this solution represents a grain of the drug. The dose should be gradually increased until the amount given is deemed sufficient.

Or

℞.

	gm. or c.c.		
Potassii iodidi	10	or	3iiss
Aquæ	100		fl℥iii

M. et sig.: One-half a teaspoonful, in milk or water, three times a day, after meals.

The iodids have been given in enormous doses, especially where gummata of the central nervous system has been diagnosed. It is a question whether such large doses are justifiable and even whether such large doses are of advantage. It is probable that ordinary fair-sized doses can do as much chemical and biologic good in causing resorption of connective tissue formations, the blood and cells being only able to absorb and utilize a certain amount of iodin, as could possibly be caused by enormous doses. In other words, enormous doses are illogical and are probably rapidly passed out of the body by the excretions.

Various other preparations of iodin are offered which are said to have the advantage of the above iodids in that they do not cause disurbance of the stomach and that they do not as readily cause iodism. When these preparations are analyzed and the exact amount of iodin which they contain discovered it is seen that the reason that they do not cause these symptoms is because the amount of iodin is so small. Consequently, if iodism is caused by potassium or sodium iodid, or they are not tolerated by the stomach, all the physician needs to do is to reduce the dose to that which will not cause disturbing symptoms, and it will then be as large a dose of iodin as would be given by an ordinary dose of one of the patented preparations.

It is possible that the thyroid gland is caused to atrophy earlier than normally by the prolonged action of mercury, and this may be a reason why in the later stages of syphilis, when connective tissue processes are so likely to develop, arteriosclerosis, locomotor ataxia, or some other sclerosis, that the iodids have been found to be of such value. An iodid in ordinary doses certainly stimulates the thyroid gland, and it is quite likely that when the condition to be combated is not serious, in the later stages of syphilis, a small dose of thyroid gland, as represented by two or three grains of the dried extract each day, may prove a valuable adjunct to the late treatment of syphilis, and may prevent, if given for a short period during each year, some of the degenerations which develop in patients who have had syphilis years before.

Thoroughness.—There are men who succeeded in the practice of medicine because of the single habit of thoroughness. The patients are completely examined and in an aggregate of cases though possessed of mediocre ability a large number of good diagnoses must result. A complete examination not only inspires the patient's confidence, but the physician's confidence in himself, and that in turn is felt strongly by the patient.—*Leucocyte.*

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TUMORS OF THE TESTICLE.

Between the tubules of the adult testicle lie groups and strands of cells which are distinguished from ordinary stroma cells by their well developed cytoplasm, and whose structure is such as to suggest an active function. First described by Leydig in 1850 they have occasionally been referred to as "Leydig's interstitial cells," and in some of the other mammals they have been found to be more highly developed than in man. The French physiologists and pathologists in particular have maintained that these cells are responsible for the internal secretion through which the testicle influences the general metabolism, the development and the psychology of the adolescent and adult male. For analogy they may be likened to the islands of Langerhans of the pancreas, which are developed in the interstitial tissue between the proper tubules of the gland, and which produce the internal secretion of the organ while the tubules produce the external secretion. As evidence of the functional activity of these cells the following facts may be cited: If, because of obstruction of the seminal passages, the seminiferous cells of the testicle undergo atrophy, the evident effects of the internal secretion of the testicle are not lost, and the interstitial cells are found to persist. In cryptorchids with normal sexual development these interstitial cells are always found to be well developed, while in cryptorchids that fail to develop these structures are found wanting or hypoplastic; removal of retained testicle from cryptorchids produces the same effects on development and sexual activity as removal of normal testicles, although such retained testicles possess no seminiferous structures, but only the interstitial cells. If in animals with one undescended testicle the normal testicle is removed the animal usually develops normally, and in such cases the retained testicle will show what seems to be a compensatory hyperplasia of the interstitial cells.

In man the interstitial cells reach their greatest development in retained testicles, especially in cases of bilateral cryptorchidism. In such testicles, with poorly developed seminiferous tubules, the interstitial cells may form more of the total bulk of the organ than the tubular structures, and sometimes their volume is such as to compensate for the loss of tubular elements so that the testicle may be of normal size. Dürck[1] has described as a special pathologic entity a form of hyperplasia of the interstitial cells, which he believes is primary and leads to a secondary atrophy of the seminiferous elements. This process occurs not only in ectopic testicles, but also in those in the normal site, and the proliferation sometimes takes on so extensive a character as to result in an actual tumor formation. Although it may be difficult to accept Dürck's idea of a primary hyperplasia of these cells leading to destruction of the other proper elements of the testicle, yet there can be little question that tumors of peculiar interest may arise from these interstitial cells. Pathologists have long known that the differentiation of many of the tumors of the testicle is often extremely difficult and peculiar forms of new growths are met with which are variously interpreted as sarcoma, endothelioma, perithelioma, angio-sarcoma, and even carcinoma. It is also well recognized that retained testicles are peculiarly prone to undergo malignant transformation, and it would seem that many of these tumors, both of ectopic and normal testicles, represent new growths derived from the interstitial cells.

Such tumors were recognized and described by a few pathologists years ago, but the subject is now again brought to light by the independent studies of Chevassu[2] in Paris and Kaufmann[3] in Göttingen, both of whom maintain the individuality of the tumors arising from the interstitial cells. In connection with the view that these cells are responsible for the internal secretion of the testicle, it is of interest to note that one of Kaufmann's specimens was removed from a mentally defective individual who was said to be sexually perverted. In all probability now that the characteristics of these tumors have been described they will be found to be not at all uncommon, and many pathologists will recall instances of testicular tumors of doubtful nature which were probably of this type.

THE ETIOLOGY OF PULMONARY TUBERCULOSIS.

The present status of the question of the interrelations between bovine and human tuberculosis is ably summarized by Sir William Whitla, in the recent Cavendish lecture.[4] He details the salient points of the question from the discovery by Koch, in 1882, of the tubercle bacillus, and the subsequent startling announcement by the latter in 1901, of a specific difference between the bovine and the human types of tubercle bacilli. This announcement carried with it the revolutionary corollaries, first, that the human variety of microorganism can not produce tuberculosis in bovines; and second, the far more pregnant one, if true, that the bovine variety can not produce tuberculosis in humans.

1. Verh. Deut. Path. Gesellsch., 1907, xi, 130.
2. Monograph, "Tumeurs du Testicle," Paris, Steinheil, 1906.
3. Verh. Deut. Path. Gesellsch., 1907, xi, 237.
4. Brit. Med. Jour., July 11, 1908.

These conclusions were so at variance with the accumulated experience of clinical observers that they raised a storm of protest, which naturally stimulated reinvestigation by a host of workers, with a view to proving or disproving Koch's pronouncements. "To any one," says Whitla, "who attempts to survey the extensive literature of this portion of the tuberculosis problem accumulated during the past six or seven years, the contradictory nature of the experimental results at first sight appears really astounding. Nevertheless," he continues, "amidst the chaos of conflicting opinions light can be discerned as clearly breaking, and I believe we are safe in concluding that the main issue has been demonstrated, even by the results of those experimentalists who still cling to a belief in there being a specific difference between human and bovine tuberculosis."

To physicians and sanitarians a clear understanding of the tuberculosis problem is obviously essential, since "as long as doubt or confusion exists, regarding the fundamental question of the practical identity or otherwise of bovine and human tuberculosis," all efforts toward efficient prophylaxis must be paralyzed. But, as Whitla says, the problem has "been so thoroughly attacked from so many standpoints that it is now safe to affirm that the main issue has been made clear," notwithstanding minor differences.

In 1898, Theobald Smith established "several decided differences between the human and bovine types," which are now accepted "both by the few who still cling to Koch's view and by those most strongly opposed to his conclusions." These differences are: 1, morphologic; 2, cultural; 3, chemical changes in the media, and, 4, differences of pathologic activity. Whitla describes the first three and then discusses the all-important fourth. Experiments with rabbits, guinea-pigs, and swine show clearly that these animals are all susceptible to infection by both types. The difference is not specific, but one merely of degree. While goats are much less susceptible to human than to bovine tuberculosis, Calmette and Guérin have shown that, not even in the insusceptible goat has there been established any fundamental difference between the action of the human and the bovine types of bacillus. As to the ox, it must be at once admitted, says Whitla, that the bovine type of bacillus exhibits for bovines a much higher infective potentiality than that of the human type. Regarding the converse view—that bovine tuberculosis is to be regarded as practically non-transmissible to humans—Whitla admits that its actual truth or fallacy is "outside the scope of direct experimentation," but he adds, "I am not without hope of being able to convince my hearers that its fallacy has been already amply proven by the very researches which are supposed to demonstrate the impossibility of producing bovine tuberculosis by the human bacillus." He then cites the inoculation experiments of Kossel, Weber and Heuss, for the German Imperial Health Council, which are held to establish a fundamental distinction between the human and bovine types of tubercle bacilli. But he points out that, even if we accept these experiments unreservedly as absolutely conclusive proof of a true specific difference between the types, we are confronted by the fact that although it is unanimously admitted that the human type is not found in bovines, "there is practically the same unanimity that the so-called bovine type is often found in human tuberculosis." The only difference of authorities is as to the frequency with which it is so found. The experiments above cited, while showing that human bacilli inoculated into calves produced only local implication of the shoulder glands, also showed that young oxen inoculated with a similar dose of bacilli of the bovine type derived from human tuberculous lesions all sickened with general tuberculosis. Whitla further cites the statement of Weber, a firm believer in the constant differences between the human and bovine type, that "it must be emphasized that between the bacilli of the bovine type coming from the ox and the pig and the bacilli of bovine type bred from human tuberculosis, there exists no difference as regards their virulence for oxen." Whitla continues: "If we accept the view of Koch, that there is a vital or specific difference between the bacilli of human and bovine tuberculosis, the question has got to be answered, 'Whence come the bacilli of bovine type which so constantly are to be found in a considerable percentage of cases of human tuberculosis?' The answer can only be found in the obvious transmissibility of the tuberculosis of bovines to man, or else in an assumption which practically amounts to the same thing, that the ox and the human derive their infection from a common source. It would thus appear that the more important of Koch's two statements is amply disproven by the results obtained by his own followers who have labored to demonstrate that human tuberculosis can not be transmitted to the ox." But Whitla points out that even this last contention can not be proved, and that many experimenters have obtained results directly at variance therewith, and have further demonstrated to their entire satisfaction the practical identity of human and bovine bacilli. He accordingly accepts "the conclusions of the great majority of all recent workers in their agreement about the practical identity of human and bovine tuberculosis." He then passes to a consideration of the portal of entry of the bacillus and endeavors to show that "the intestinal route plays a far more important rôle in the production of human pulmonary tuberculosis than has been hitherto recognized."

It may, therefore, be unhesitatingly stated that, for practical purposes, at any rate, the possibility of tuberculosis being conveyed from bovines to humans must be admitted; it remains now to settle to what extent and by what channels such transmission takes place.

ORGANIZED RESCUE WORK IN MINES.

Several recent explosions in mines, notably that at Courrières, in France, where hundreds of men lost their lives, while the evidence showed that they were alive long after the time when they were supposed to have perished, have impressed on governments the necessity for effective, properly organized rescue work. A government report, recently issued,[1] contains a review of what is being done in Europe for the organization of rescue work after serious accidents or explosions in mines.

There have been several such disasters in this country in recent years that make the subject of special importance to us. When an accident happens in a mine the readiness of comrades to risk their lives to save those who are in danger is the principal feature of the rescue work. As a rule, however, these men are but ill-trained, and dependable apparatus is not provided to enable them to penetrate some distance into the mine in spite of the presence of "after-damp." If it were provided, and if the men were trained in its use, very effective rescue work might be accomplished without that delay which renders the death of the victims almost inevitable.

The particular needs for these emergencies are breathing apparatus and a trained corps of rescuers who know the dangers and have been taught how to avoid them, or at least how to minimize them to a great degree. Both these requirements demand the assistance and oversight of physicians, or at least of those who understand respiratory dangers and are able to pick out proper subjects for such rescue work and to recognize the earliest signs of approaching exhaustion. In Austria and France the provision of rescue apparatus in mines is now made compulsory by law. In Germany it has been voluntarily adopted in all collieries. In Russia, when over fifty men are employed in one mine, it is provided that "every colliery where more than fifty miners are at work must have a rescue corps trained to work in irrespirable gases, that the number of men in such a corps must be equivalent to 4 per cent. of the miners at work, and that at least three sets of breathing apparatus fully equipped must be kept in readiness by each colliery." The breathing apparatus principally in use is a helmet appliance somewhat resembling a diver's helmet, through which fresh air is supplied from a distance by means of tubes, the respired air being conducted away. In recent years a pneumatophore has come into use and has given considerable satisfaction. In this the expired air passes through chemicals by which it is regenerated and can be breathed over again. This can be depended on to allow a man to work in irrespirable air for two hours.

It is felt, however, that the most important part of the work is the training of rescuers. This is now being done at a number of places in England and Scotland. A certain number of men are trained at each colliery, and in case of an accident those from near-by collieries are summoned by telephone so that a considerable body of trained rescuers becomes available without much delay. A recent report of a commission appointed to investigate this subject, the commission consisting of practical mining engineers and medical and other experts, advised that at least thirty men in each colliery should be given regular instructions in the use of the various methods necessary in restoring ventilation to the shut-off portion of the mine as soon as possible and in rapidly bringing aid to those who are the victims of the after-damp of the explosion. The whole subject is in line with humanitarian advance and appeals to physicians more than to any others in the community. Such precautions will not often prove life-saving, but when they do they will, as a rule, prove the means of rescuing not a few but the many men who are likely to be imprisoned or overcome in these sad disasters.

1. Daily Consular and Trade Reports, Bureau of Manufactures, U. S. Department of Commerce and Labor, June 25, 1908.

THE WHITE RACE IN THE TROPICS.

The optimistic opinions credited to Dr. Gorgas and others, as to the conquest of the tropics for the white man by the recent developments of medical science, are decidedly contradictory to the general ideas as to the essential unhealthfulness of those regions for our race. It has been demonstrated that the great scourges of malaria and yellow fever are avoidable, that the cause of tropical anemia is a controllable parasite and that the death rate in well-governed tropical cities can be brought down to a figure comparable to that of many municipalities in the temperate zone. A temporary residence in the tropics has lost many of its former terrors. The question still remains whether the northern races can permanently occupy the equatorial regions of the earth without disaster, or, at least, without undergoing mental and physical deterioration in the course of time from the effects of climate alone, admitting that the parasitic diseases of the tropics can be conquered.

In his recent article in THE JOURNAL[1] Anderson takes the extreme position that the tropics are deadly to the morale and vigor of the northern races and that only black and brown races can thrive or can successfully survive in these most productive portions of the globe. The historical facts which Anderson adduces in support of his views, however, lose most of their force when we consider that they all are of a date prior to the recent discoveries and many of them are, aside from this, poorly chosen for his argument. Buccaneering and military expeditions are not colonies and their disasters are not good evidence of the impossibility of serious attempts at colonization. For centuries the Spanish and Portuguese were the only nations permitted to colonize Latin America, and their active opposition was, as much as the climate, the reason of the failure of the one or two not very well organized attempts of colonists of the more northern Europeans in those regions. Against the

1. THE JOURNAL A. M. A., May 30, 1908.

failures we may place the successful colonizations of the English in tropical Australia, the Germans in Brazil, the Americans in Hawaii, to say nothing of our own Gulf coast, which is at least subtropical. There is, moreover, no evidence that Germans or Anglo-Saxons would not have made as successful colonists in Spanish America, had they been permitted or sufficiently attracted there, as the Spaniards themselves.

It is still generally assumed that whites are unfit for hard physical labor in the tropics and that, subjected to such conditions, they must necessarily succumb. It is not absolutely proved, however, that this is anything more than an assumption, if the infectious and parasitic diseases of those regions can be guarded against. Undoubtedly there would be some physical changes and possibly other modifications, but whether any that would affect the vitality or virility of the race, if correct sanitary conditions can be secured, has not yet been demonstrated. Whether the modified tropical white man will be the moral and physical equal of the white man of temperate regions may be a question; humidity and heat combined are not favorable to the more intensified activity demanded by our highest civilization. There is a rational possibility, however, that if the hostile organisms of the tropics can be kept in abeyance those regions will in the future become far more habitable for the higher races than they have been in the past, and with the improvement of the means of communication the white man may in time become a bird of passage, so to speak, utilizing alike all latitudes.

COOPERATION BETWEEN THE MEDICAL PROFESSION AND LEGISLATURES.

The *West Virginia Medical Journal* for June contains an account of the recent meeting of the state association together with some editorial comments thereon. One paragraph in particular is worthy of note:

For the first time in its history the West Virginia Medical Association was officially recognized as an important factor in the public affairs of the state. A committee appointed at the recent extra session of the legislature for that purpose appeared before it to confer on the matter of a state tuberculosis sanitarium and to ask that a committee be appointed from its membership to advise and assist the legislative committee in the formulation of plans for such an establishment. This is the most auspicious beginning of what, we trust, will be a continued, although too long delayed, recognition of our association in matters of public and state concern.

This action of the state legislature is a striking sign of the change which has taken place regarding the attitude of the medical profession and the public to each other. There is no reason why important questions of public policy involving hygiene and sanitation which arise in each state should not be referred to the state society for advice and suggestions. Such cooperation will prevent some of the absurd blunders which have been made in past years by lawmakers who have attempted to legislate on scientific matters and will greatly redound to the benefit of the people of the state. Such advances on the part of state legislatures should be encouraged in every way possible and members of our lawmaking bodies should be given to understand that the entire medical organization, from the county societies to the national body, stands ready at all times to assist by advice or suggestion in furthering the best interests of the people.

THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.

The International Congress on Tuberculosis which convenes in Washington next month—September 21 to October 12—undoubtedly will be the most important of any meeting ever held for the discussion of the important question of tuberculosis. For this reason, and because it is to be held in this country, every American physician should help to make it a success, and one evidence of success will be a large active membership. If the coming congress is to compare favorably with that of Paris in 1905, the United States should furnish ten thousand active members, according to a statement issued by the secretary-general. If such a membership be attained, it must be through the hearty cooperation of every physician interested. It is therefore hoped that all who are able will enroll themselves as active members and in addition urge others to do so. There will be a full equivalent for the $5 membership fee in the reports and publications of the congress, in addition to the fact that a splendid cause is being supported. Membership should be obtained as soon as possible, as the officials in making the preliminary arrangements want an approximate idea of the number who will attend. Applications may be sent to Dr. John S. Fulton, secretary-general, Washington, D. C., from whom also all information regarding the congress can be obtained.

THE LACK OF VITAL STATISTICS.

Under the facetious but pertinent heading, "Glass Houses," Dr. Cressy L. Wilbur, chief statistician of the Bureau of the Census, comments[1] on the frequent publication of the item about vital statistics in Turkey. To the question, "What is the death rate in your country?" the Turk is made to answer, "It is the will of Allah that all should die. Some die young, and some die old." To the question, "What is the annual number of births?" the Turk replies, "God alone can say—I do not know and hesitate to inquire." Dr. Wilbur very frankly calls attention to the fact that the American can give answers that are but little, if any more satisfactory than those given by the Turk. As to the death rate in the United States, the government has been endeavoring to find this out since 1850. The registration of deaths is dependent on the enactment and enforcement of state laws or city ordinances and only fifteen of the forty-six states have been accepted by the Bureau of the Census as having sufficiently complete registration of deaths so as to be dependable. As to births, the American does not know the exact number of births each year for his country as a whole nor for

1. Charities and the Commons, July 4, 1908, p. 449.

a single state, nor even for a single city. He also "hesitates to enquire" and has been hesitating for over a half a century, to take this matter up in a business-like and effective way. That one of the most enlightened countries on earth should even be comparable with the "unspeakable Turk" in the matter of vital statistics, is in itself, intolerable. There are signs, however, that this bad record is to be bettered and it is well worth the attention of all who can influence legislation on the subject.

A PREVENTORIUM LEAGUE.

Dr. William Ewart, in the July *Practitioner,* urges the formation of a league for the education of the profession and the public to the realization of the wider benefits that would accrue to the state from the establishment of "preventoria," rather than of sanatoria. By "preventoria" he means institutions — which need not be at all costly—to check the spread of tuberculosis at its source. This would be done by receiving and caring for children who are at present being systematically infected at home, through those cases of tuberculosis that are too advanced or too numerous for the sanatoria to receive. The home infection of the young is undoubtedly a most fertile source of the spread of tuberculosis, and the prevention of its inception in children is surely a still more important measure than the prevention of its further development in those already affected.

MR. TAFT ENDORSES A HEALTH BUREAU.

In his speech accepting the Republican nomination for President, Mr. Taft says: "I have long been of the opinion that the various agencies of the national government established for the preservation of the national health, scattered through several departments, should be rendered more efficient by uniting them in a bureau of the government under a competent head, and that I understand to be, in effect, the recommendation of both parties." There is probably no one better informed regarding the details of organization of the federal government than Mr. Taft, nor any one better qualified to understand the advantages to the public and the nation which would accrue from uniting all of our national public health agencies into a single compact organization. Mr. Taft's record as an executive officer is ample guarantee of action on this question, should he be elected president. As the Democratic national convention at Denver adopted a strong plank endorsing a bureau of public health, we may expect an equally positive endorsement from Mr. Bryan in his speech accepting the Democratic nomination. A plan endorsed by the two dominant parties should not fail of success. The question has no partisan aspects, and when presented for consideration to Congress at the proper time undoubtedly will have the support of all members regardless of party affiliations.

Vaccination in England.—The duties of the public vaccinator are rapidly disappearing in many small English towns by the inhabitants availing themselves of the conscientious objectors' declaration act.—*Med. Record,* June 27, 1908.

Medical News

DISTRICT OF COLUMBIA.

To Enforce Food Law.—As a result of the recent decision of the police court that prosecutions for the alleged sale of impure milk and food products can not be conducted by the District of Columbia, the Secretary of Agriculture has designated Dr. R. L. Lynch, district chemist, as a special assistant in the bureau of chemistry. Violations of the Pure Food Law will be prosecuted by the Department of Agriculture acting on data furnished by the health department.

Vital Statistics.—During the week ended July 4, there were reported to the health department of the district 136 deaths; diarrheal diseases leading with 29, followed by heart disease with 14, and tuberculosis with 13 deaths. Of the decedents 37 were under one year of age; 20 were 70 years old or over. During the same week 145 births were reported.——On July 4 there were reported in the district 339 cases of measles, 20 of whooping cough, 107 of chickenpox, 83 of typhoid fever, 12 of scarlet fever, and 7 of diphtheria.——The health and mortality record for the week ended July 18 shows that there were 142 deaths, an increase of two over the mortality of the previous week. There were also 142 births, of which 104 were white and 38 colored.

ILLINOIS.

Chicago.

Personal.—Dr. Clarence S. Yoakum has been appointed instructor in physiology at the University of Texas.——Dr. and Mrs. Wiliam N. Senn, Dr. and Mrs. John B. Murphy, Dr. David F. Monash and Dr. and Mrs. Henry S. Tucker have sailed for Europe.——Dr. William A. Evans has been made professor of sanitary science at Northwestern University Medical School. ——Dr. Thomas J. Sullivan has been made chief of staff, and Dr. Charles P. Caldwell, head of the dispensary, St. Bernard's Hotel Dieu Hospital.——Dr. Daniel N. Eisendrath has been made professor of surgery in the College of Physicians and Surgeons.——Dr. Silas T. Richman was elected supreme physician of the United Order of Foresters, at the annual convention in St. Paul, July 21.

INDIANA.

Personal.—Dr. William A. Holloway, Logansport, is reported to be seriously ill.——Dr. Frederick W. Terflinger, formerly assistant medical superintendent of the Northern Indiana Hospital for the Insane, Longview, Logansport, has been appointed medical superintendent, vice Dr. Joseph C. Rogers, deceased.——President Winthrop E. Stone of Purdue University was recently presented a gold watch by the Indianapolis physicians affiliated with the Purdue Medical School.——Dr. Oran E. Druley, Anderson, lost an eye in a fireworks accident July 4.——Dr. William O. Gross, Fort Wayne, has been elected professor of toxicology in the Indiana University School of Medicine, Bloomington.

June Disease and Death.—The June death rate for the state was 10.7 per 1,000. The most prevalent malady was rheumatism, followed by diarrhea, tonsillitis, bronchitis, typhoid fever, cholera morbus, whooping cough, measles, cholera infantum, inflammation of the bowels, dysentery, intermittent and remittent fever, diphtheria, scarlet fever, smallpox, erysipelas, influenza, pneumonia, pleuritis, chickenpox, puerperal fever, typho-malarial fever and cerebrospinal meningitis. There were 97 cases of smallpox reported from 21 counties, with 3 deaths. Tuberculosis caused 344 deaths; typhoid fever, 27; pneumonia, 96; influenza, diphtheria and measles, each 8; scarlet fever, 5; whooping cough, 25; diarrheal diseases, 102; cerebrospinal meningitis, 9; puerperal fever, 13; cancer, 131, and violence, 194.

KENTUCKY.

Louisville.

City Hospital.—At the August 5 meeting of the general council an ordinance will be favorably reported to provide for an election to decide whether or not there shall be a bond issue of $1,000,000 for the equipment and furnishing of a new city hospital. The ordinance provides for 40-year bonds at the rate of 4 per cent, setting aside $52,876 annually to cover interest on the bonds and the sinking fund. An increase of 3 cents on the tax levy will be necessary to take care of these bonds. The hospital committee appointed by the mayor, composed of 12 physicians, has decided to recommend a hospital on the pavilion plan, built of reinforced concrete, one, two and three stories high. The provisional plan calls for two general wings, of six wards each, opening off a common hallway. There is to be a group of three buildings connected

with the main building, to be used as a nurses' home, a free dispensary and a laboratory building. The present administration has declared itself unqualifiedly in favor of building the hospital, and it is believed that the bond issue will carry.

LOUISIANA.

Medical Bill Passed.—The Labbe medical bill, amended so as to exclude osteopaths from its provisions and to permit plantation midwives to carry on their vocation, was passed by the house July 2 without a dissenting vote.

Personal.—Dr. Rudolph Matas, New Orleans, is confined to his bed with a serious infection of the right eye, the source of which can not be definitely accounted for.——Dr. J. H. Pankey has been elected president, and Dr. Benjamin H. Talbot, a member of the Dodson board of health.——Dr. Beverly W. Smith and Sterling J. Gates have been appointed members of the Franklin board of health.

MASSACHUSETTS.

Boston.

New Tuberculosis Camp for Children.—The Boston Association for the Relief and Control of Tuberculosis which established the first institution for day care of consumptives, is about to establish a camp school on the grounds of the Bingham Hospital on Parker Hill avenue. A new temporary building will be erected with kitchen, store room, lavatories, shower baths, and dressing rooms. There will also be a separate small building for the doctor's office and dining-room and rest tents, hammocks and easy chairs. Vegetable and flower gardens will be laid out and the children will be taught how to care for them and will be given the products of their own gardens to carry to their homes.

MISSOURI.

High Versus Low Buildings for Hospitals.—A committee of the St. Louis Medical Society of Missouri, appointed to consider the plans for a new city hospital, advocated the building of three four-story buildings facing Lafayette avenue, instead of an eleven-story building as proposed by the health commissioner, Dr. H. Wheeler Bond.

Licenses Revoked.—The license of Dr. C. W. Jones, Columbia, is said to have been revoked on account of issuance of prescriptions for liquor for other than medical purposes. Dr. Jones is said to have sold liquor to negroes in large quantities, the prescriptions being issued from his sanatorium in Columbia.—The license of Dr. E. C. Duncan, Salem, is said to have been revoked by the State Board of Health on the charge of illegally prescribing liquor.

St. Louis.

Municipal Tuberculosis Commission.—An important step has been taken in the campaign against tuberculosis in St. Louis by the appointment of the Municipal Commission of Tuberculosis, of which Dr. William Porter is chairman. The commission is composed of nine citizens, whose duty it is to investigate the prevalence of tuberculosis and report findings and report recommendations for the limitation of the disease. The secretary is the only salaried officer. The probability is that the commission will be made permanent.

NEW JERSEY.

Personal.—Dr. H. E. Ricketts, Brooklyn, N. Y., has been appointed superintendent of the new Essex County Isolation Hospital, Newark, and Dr. Arthur D. Draper, Waltham, Mass., assistant superintendent.——Dr. Lewis H. Miller, Woodstown, fell down stairs, June 14, seriously injuring his leg.——Dr. J. E. Rayne and family, Atlantic City, sailed for the West Indies June 30.——Dr. James L. Perkins, Cranford, has been made health officer of the Garwood Board of Health.——Drs. Charles M. Gray, George Cunningham and Sarah Jackson are the medical members of the executive committee of the Vineland Antituberculosis Society.——Dr. John T. Connolly, city physician of Bayonne, sustained a fracture of the leg in an automobile accident recently.——Dr. Isaac Surnamer, Paterson, in a fight with a burglar, June 1, was knocked down with a chair by the thief, who was afterward captured.——Dr. Carl A. Gesswein, Plainfield, while trying to prevent a collision between his automobile and a bicycle, ran his machine into a tree and fractured his nose.

NEW YORK.

Personal.—Dr. William C. Porter, Albany, has been appointed physician, sixth grade, at the Hudson River State Hospital, Poughkeepsie.——Dr. Edward N. K. Meers, Albany, has returned from London.——Dr. John Dugan has succeeded Dr. Frank G. Sherwood as health commissioner of Albion.

Appointments of Regents.—The State Board of Regents has selected Dr. Frank Rawlins to succeed Dr. Edward J. Goodwin as second commissioner deputy of education; Drs. Frank W. Adriance, Elmira, and Floyd S. Farnsworth, Plattsburg, have been reappointed members of the board of medical examiners, and Dr. Alfred H. Williams, Rochester, has been appointed a member of the board.

Changes in Medical Faculty.—The following changes have been made in the faculty of the College of Medicine, Syracuse University: Frank P. Knowlton, A.M., M.D., professor of physiology; Halbert S. Steensland, B.S., M.D., professor of pathology and bacteriology; H. D. Senior, M.B., F.R.C.S., professor of anatomy; Ernest N. Pattee, M.S., professor of chemistry; Richard H. Hutchings, M.D., Ogdensburg, lecturer on psychiatry; Ralph R. Fitch, M.D., Rochester, lecturer on orthopedics, and Charles V. Morill, A.M., New York City, lecturer on histology and embryology.

Tuberculosis Tag Day.—As the outcome of an effort to raise funds by a "tag" day in Schenectady, $2,500 has been secured with which a day camp for tuberculous has been established, similar to that secured in Albany by the Central Federation of Labor. The day camp is not to be recommended as a permanent substitute for the sanatorium, but still it is a valuable compromise. Here the patients get plenty of fresh air and sunlight, and a suitable and sufficient diet of milk and eggs, but the main value lies in the instructions given as to the means of cure and prevention, whereby the patient may become a help to himself and cease to be a menace to others. By a similar effort Geneva has raised a fund whereby a visiting nurse may be sent to the homes of patients, to see that they are properly fed and cared for, and the patients and their families shown the means of cure and prevention of disease.

New York City.

Personal.—Dr. George G. Rambaud, president of the New York Pasteur Institute, has returned from Paris.——Dr. De Santos Saxe has been appointed instructor in genitourinary diseases in the New York Postgraduate Medical School and Hospital as the result of a competition in which each candidate presented an original thesis.

Fight Against Noise Begins in Earnest.—Commissioner Bingham issued an order July 18 for the suppression of unnecessary noises. A special effort will be made to stop the noise of street hawkers and of automobile horns in certain sections where they are most annoying. The heads of nearly all the hospitals and institutions of the city have expressed themselves as highly gratified by this step.

Much Scarlet Fever.—The Willard Parker Hospital notes a marked increase in scarlet fever. It has been shown that during April of last year there were 708 cases of scarlet fever in the hospital; whereas this last April there were 1,255 cases. Health Commissioner Darlington thinks that the board of estimate should appropriate sufficient money to provide proper care for those suffering from contagious diseases.

Attribute Large Mortality to Flies.—Although Dr. Daniel D. Jackson has made no such thorough investigation this year, as he did last year for the Merchants' Association, he declares with other observers that there are an unusual number of house flies this year and that the protracted hot weather has favored their increase and dissemination. He prophesies that this will lead to an increased number of cases of typhoid fever within the next few weeks.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended July 18, 481 cases of tuberculosis, with 173 deaths; 203 cases of diphtheria, with 22 deaths; 312 cases of measles, with 13 deaths; 156 cases of scarlet fever, with 14 deaths; 50 cases of typhoid fever, with 8 deaths; 25 cases of whooping cough, with 6 deaths; 7 cases of cerebrospinal meningitis, with 7 deaths; and 35 cases of varicella, a total of 1,269 cases and 243 deaths.

Must Allow Member to Resign.—Dr. Charles J. Mooney has succeeded in resigning from the New York County Medical Society, that is to say, he has obtained a peremptory writ of mandamus decreeing that the county medical society accept his resignation handed in in December last. This, it is believed, is the final chapter in the suit against Champe Andrews, formerly counsel for the society, and Dr. Mooney, which has been in progress for more than a year.

To Reduce Infant Mortality in Brooklyn.—An elaborate campaign is to be put in full operation in Brooklyn against the high infant death rate in Brooklyn. The mother of every new baby born in the tenement-house districts of Brooklyn

will be visited repeatedly by one of the 25 nurses of the department of health, supplemented by personal visits from one of the matrons of the Brooklyn Children's Aid Society, 16 modified milk distributing centers and by the society's physicians. The instruction to be supplied is intended as a preventative of disease. Where change of air and scene is required the children will be sent at once to the Sea Side Home at Coney Island or to the Harriman Home.

A Bad Year for Babies.—The New York Conference on the Summer Care of Babies states that there has been an unusual increase in the number of deaths among children from diarrheal diseases this year. From June 1 to July 18 there were 1,132 deaths, while during the same period last year there were only 772. For the week ended July 18 there were 369 deaths of infants under one year of age. There were proportionately more deaths in Brooklyn than in Manhattan, and it was claimed that this is not due to sanitary conditions, but it is supposed that physicians erroneously acredit deaths to other causes than diarrheal. There was also a remarkable increase in the number of deaths from tuberculosis. During the week there were 27 deaths from sunstroke.

NORTH CAROLINA.

Antirabic Treatment.—The State Board of Health officially announces the perfection of arrangements by the State Laboratory of Hygiene in Raleigh, for the administration of antirabic treatment. Dr. Charles A. Shore, state biologist, is in control of this new department, which is fully equipped for its work. Persons who are able will be expected to pay expense of treatment, but indigent patients will be cared for by the state without expense.

Reunion.—The alumni of the Jefferson Medical College, Philadelphia, who were in attendance on the state medical society met June 16 and organized the Jefferson Medical College Alumni Association of North Carolina and elected the following officers: Dr. Jacob F. Highsmith, Fayetteville, president; Drs. Eugene B. Glenn, Asheville, and William O. Spencer, Winston-Salem, vice-presidents, and Dr. William P. Holt, Duke, secretary and treasurer.

OHIO.

Smallpox.—In Shantytown, an addition to Troy, 16 concealed cases of smallpox have been discovered, and about 40 individuals are under quarantine.

License Revoked.—Despite the determined protest of Dr. J. A. Ambrose, Dayton, recently pardoned, after serving a term in the penitentiary for criminal malpractice, the State Board of Medical Registration and Examination revoked his certificate July 7.

Ill and Injured.—Dr. George W. Crile and Frank E. Bunts, Cleveland, narrowly escaped death July 18, when the horses which they were riding stepped on ground charged with electricity and were killed.——Dr. James W. Hughey, Washington Court House, underwent a surgical operation at Johns Hopkins Hospital, Baltimore, June 22.——Dr. Willard C. Rank, Newark, who has been seriously ill with septicemia, is reported to be improving.

Oppose Advertising Practitioners.—To the Muskingum County Medical Society, at its July meeting, was submitted a communication calling attention to the fact that the names of several members of the society have appeared in the lay press, notwithstanding rules forbidding any such publication. The secretary of the society was instructed to furnish all newspapers in the county the names of the members of the society, with the request that they be not published excepting with the special consent of the practitioners or as a paid advertisement.

Faculty Changes.—With the reorganization of the faculty of Starling-Ohio Medical College, Columbus, Drs. Clovis M. Taylor and Louis M. Early have resigned. Dr. Ernest Scott has been placed in charge of the pathologic department; Dr. Yeatman Wardlow has been made professor of clinical gynecology; Dr. Sherman Leach, professor of operative surgery; Dr. John H. J. Upham, professor of medicine; Dr. Elmer G. Horton, professor of hygiene and sanitary science; Dr. John D. Dunham, professor of diseases of the stomach and dietetics; Dr. J. Baldwin McComb, assistant professor of dermatology; Dr. Edwin A. Hamilton, professor of rectal diseases; Dr. Edward C. Buck, instructor in anatomy; H. R. Brubacher, lecturer in pharmacology and dean of the college of pharmacology; Dr. Charles J. Shepard, lecturer on dermatology; Dr. Verne A. Dodd, lecturer on minor and operative surgery; Dr. Jacob J. Coons, lecturer on laboratory diagnosis, and Dr. Andrew Rodgers, lecturer on obstetrics.

Personal.—Dr. Oscar R. Mickelthwait, Portsmouth, has been appointed surgeon of the B. & O. S. W. Ry. for the Hemden district.——Dr. Warren G. Murray, Dayton, recently returned after nine months in Europe.——Dr. Paul W. Tappan, assistant physician of the Dayton State Hospital, has resigned.——Dr. Mabel Richards, Lexington, has been appointed interne at Mt. Carmel Hospital.——Dr. P. A. Jacobs, Cleveland, is in London studying serum diagnosis and vaccine therapy.——Dr. Isabel Bradley on leaving Columbus State Hospital, was given a reception and presented with a handsome desk set.——Dr. Gordon F. McKim has been elected genitourinary surgeon of the staff of Springfield Hospital, vice Dr. Henry Baldwin, Jr., who becomes a member of the consulting staff.——Dr. Arthur G. Helmick has been appointed chief physician of the state penitentiary, vice Dr. John M. Thomas, resigned, and Dr. Dana W. Collison has been appointed night physician.——Dr. T. L. Baxter, assistant physician at the Athens' State Hospital, has resigned.——Dr. Walter W. Wetmore has been elected health officer of Conneaut, vice Dr. Otto N. Warner.

Cincinnati.

Personal.—Dr. Corliss Keller has been appointed first assistant at Longview Asylum, vice Dr. Willard Kendig, resigned.——Dr. McLeish has been appointed assistant physician at the Athens State Hospital.——Dr. Mary Isham has been appointed a member of the staff of the Columbus State Hospital.——Dr. William S. Keller has moved to St. Paul, Minn., to take up the practice of the late Dr. Jacob Schadle.

Pasteur Institute to be Established.—Drs. Asa B. Isham and Louis Schwab, medical directors of the City Hospital, have decided to open a Pasteur institute in connection with the hospital laboratory, to be in charge of Dr. Alfred Cole. It is the intention of the management to treat residents of Cincinnati without expense, but a fee of $100 will be charged non-residents, the amount to be turned over to the hospital fund.

PENNSYLVANIA.

Hospital Fire.—A fire entailing a loss of probably $75,000, broke out in the accessory buildings of the State Hospital for the Insane at Norristown, July 10. The fire was prevented from reaching the buildings occupied by the inmates.

Proposed New Milk Law.—As the result of a meeting of state officials held at West Chester July 16, a bill containing three important regulations on milk will be introduced at the next meeting of the legislature. One will provide that all cream sold must contain at least 15 per cent. butter fat. The other two provide that no milk shall contain added water, and that no butter fat at all shall be removed from milk; in other words, that milk must be sold to the consumers exactly as it comes from the cows.

Philadelphia.

Another Public Bath.—The contract for the construction of a public bath house was awarded July 18 to Edward H. Fondler for $19,332. The new house is to be erected on the corner of Twelfth and Reed streets.

Hospital Report.—The report of the Methodist Hospital for June shows that 93 patients were admitted, 643 new patients visited the dispensaries, and 2,609 administrations were made in the out-patient department.

Charitable Bequests.—The will of the late Elizabeth Renz contains a provisional bequest of $8,500, which is to be divided equally between the German Hospital and the German Protestant Home.——The will of the late Mary Burk bequeaths $2.000 to the Pennsylvania Home for Blind Women.

Hospital Improvements.—Work of reconstructing the Preston Retreat has been started and the improvements in this old structure will cost about $80,000. The present building was erected in 1837, and the proposed improvements will increase the capacity of the hospital from 30 to more than 50 beds. Modern bath rooms will be installed and two water towers will be erected at either end of the structure to ensure safety from fire. An elevator for patients will be constructed and a new heating and ventilating plant will be installed. The money for these improvements is derived from unimproved land belonging to the Preston Retreat.

Medical Alumni Officers Elected.—At the annual meeting of the alumni association of the University of Pennsylvania, Department of Medicine, held June 16, the following officers were elected: President, Dr. Charles K. Mills; vice-presidents, Drs. Wharton Sinkler, Philadelphia; Allen J. Smith, Philadelphia; H. H. Whitcomb, Philadelphia; Augustus S. Thayer, Portland, Me.; Theodore Diller, Pittsburg; Dewitt Sherman,

Buffalo, and Alonzo E. Taylor, San Francisco; historian, Dr. Roland G. Curtin; secretary and treasurer, Dr. Edward A. Shumway; executive committee (three years), Drs. Samuel S. Stryker, William J. Taylor, B. Franklin Stahl, J. Allison Scott, William Campbell Posey, William Pepper, Archibald E. Olpp, James Tyson, DeForest Willard, George E. de Schweinitz, Charles W. Burr, George C. Stout, and J. Gurney Taylor.

GENERAL.

Reserve Medical Corps.—More than one hundred members of the Reserve Medical Corps of the Army have been commissioned and assigned to duty at various stations, for the most part at posts where they have hitherto been on duty as contract surgeons.

Change in Date of Meeting.—The tenth annual conference of the American Hospital Assocation will be held at the King Edward Hotel, Toronto, Ont., September 29 to October 2. The date has been changed from the week of September 22 on account of the impossibility of securing hotel accommodations at that time.

Selects Site for Hospital.—Surgeon General Rixey, U. S. Navy, has recently visited the new naval training station at Lake Bluff, Ill., to inspect the work under construction and select a site for the naval hospital in connection with the station, for which $250,000 was appropriated by the last congress. The surgeon general then went to New Fort Lyon to inspect the naval hospital for consumptives, which now has 120 patients.

Yellow Fever in Cuba.—Under date of July 13 the yellow-fever experts detailed by the superior board of health to investigate sanitary conditions in Daiquiri, Santiago province, states that yellow fever has been present in this district since April last. He had made positive diagnosis in 4 cases, and obtained notes on 10 other patients who had recovered. Since July 8, 4 cases have been reported, leaving 7 under treatment at the close of the week. The town has been quarantined and a detention camp has been opened near Santiago.——Two new cases of yellow fever were reported at Daiquiri, July 18.

Gibbs Memorial Prize.—The New York Academy of Medicine announces that the sum of $1,000 will be awarded to the best essay in competition on "The Etiology, Pathology and Treatment of the Diseases of the Kidney." Essays must be presented on or before Oct. 1, 1909. New discovery or fruitful research will be considered the standard of merit, and essays must show originality in order to obtain the prize. The competition is open to regular practitioners in the United States. Essays should be transmitted to the committee of the New York Academy of Medicine on the Edward N. Gibbs Memorial Prize, 17-21 West Forty-third Street, New York.

Death Rate in Panama and Canal Zone.—Assistant Sanitary Officer Mitchell of the Canal Zone reports that in May, 1907, the annual death rate per 1,000 for white employés was 18.34; in May, 1908, the coresponding rate was 14.59. The death rates for colored employés in May, 1907, was 34.48 per 1,000, while in May, 1908, it was 8.82 per 1,000. The death rate for all employés in May, 1907, was 30.15 per 1,000, while in May, 1908, the rate was 10.44 per 1,000. The reduction as compared with last year is said to be due to the decrease of the number of deaths due to typhoid fever and pneumonia. All the deaths from these two diseases in May this year were among black employés.

Medical Society Meetings.—The thirty-fifth annual meeting of the Northern Tri-State Medical Association was held in South Bend, Ind., July 14, under the presidency of Dr. A. E. Bulson, Fort Wayne. Dr. William A. Dickey, Toledo, Ohio, was elected president. The next meeting will be held in Ann Arbor, Mich.——At the annual meeting and banquet of the Phi Delta Medical Fraternity, held in Brooklyn, July 1, 2 and 3, Dr. John N. Balderson, Brooklyn, was elected grand president; Dr. Edwin Hannock, Albany, N. Y., grand vice-president; Dr. William E. Lippold, Brooklyn, grand secretary-treasurer; Dr. Charles Marshall, Chicago, grand chaplain; Dr. J. S. Modesitt, grand marshal, and Dr. Forrest Reese, Chicago, grand historian.

Railway Surgeons Meet.—The surgeons of the New Orleans and Northeastern, Alabama and Vicksburg, and Shreveport and Pacific railroads organized the Tri-Railway Surgeons' Association at New Orleans, June 11, with the following officers: President, Dr. Charles W. Bufkin, Hattiesburg, Miss.; vice-presidents, Drs. James J. Haralson, Forest, Miss., and Henry F. Wilkins, Rayville, La.; secretary, Dr. Joseph D. Martin, New Orleans, and treasurer, Dr. R. W. Thompson, Lumberton, Miss.——The seventh annual meeting of the Frisco System Medical Association was held in Kansas City May 25 and 26. The following officers were elected: Dr. Samuel C. James, Kansas City, Mo., president; Drs. Joseph W. Ballenger, Carbon Hill, Ala.; James A. Foltz, Fort Smith, Ark.; Henry Z. Hissem, Ellsworth, Kan.; J. H. McMill, Mississippi; Harold H. Lucas, Chaffee, Mo.; Edward A. Mayberry, Enid, Okla.; Frank D. Smythe, Memphis, Tenn., and Wiley E. Sturgis, Stephensville, Texas, vice-presidents; Dr. A. D. Parce, St. Louis, secretary, and Dr. Walter A. Camp, Springfield, Mo., treasurer (re-elected).

Destruction of Mosquitoes in Cuba.—Major Kean of the medical corps of the U. S. Army, chief sanitary officer of Cuba, in a report to Governor Magoon, dated June 15, calls attention to the excellent work that is being done in the destruction of mosquitoes on that island. This especially applies to the zone about Cienfuegos and extending up the railroad as far as Santa Clara, which was severely infected last summer and fall. Inspections in Cienfuegos about the 1st of April showed a deposit of larvæ, on an average, in every ten houses inspected, whereas the inspection reports for the last three weeks show a breeding place of larvæ in every 51 houses, in every 64 and every 71 houses, respectively. The town of Palmira, where yellow fever occurred as late as January of this year, has been so thoroughly cleaned that in a recent inspection not a single deposit of larvæ was found in 112 houses examined. Similar good results have been achieved in Rodas and Santa Clara. In the Guines-Union zone in the southwestern part of Matanzas province, and the southwestern part of Havana province, which has been one of the most troublesome and persistent zones of infection in the island, this locality being responsible for the recurrence of yellow fever last spring; excellent work has been accomplished under the direction of Dr. Rodriguez Alonzo as special commissioner. In both of these zones it is believed that the stegomyiæ have been reduced below the yellow-fever limit. Sanitary officers are doing mosquito work with their sanitary brigades in all the municipalities of the island, but these zones are those in which, on account of the extended infection last summer, special mosquito work under a special commissioner has been deemed necessary. In Havana there are still harmless mosquitoes, but within the city limits mosquito breeding is practically at an end, as a breeding place is found in only about one house in 450 inspected, and of these considerably less than one-half are found to be stegomyiæ. The work in Santiago has been less satisfactory on account of the opposition of the people and the necessity of storing water in barrels because of the uncertain water supply. On this account and because of the persistence of the yellow-fever foci there, Captain H. D. Thomason, medical corps, U. S. A., was sent in January as special commissioner, and since April 1 has been assigned to station there. The work has lately shown steady improvement, and it is hoped in another month will be brought up to a satisfactory standard. Improvement is necessarily slow because it requires education, not only of those engaged in the work, but of the entire population.

Civil-Service Examination.—The United States Civil-Service Commission announces an examination to be held August 26, to select eligibles from which to fill vacancies in the position of clinical director in the Government Hospital for the Insane, Washington, at a salary of $2,000 per annum, with maintenance in the hospital; and vacancies requiring same qualifications as they may occur in any branch of the service. Applicants must be graduates of regularly incorporated medical colleges and must have had ten years' experience in institutions for the care and treatment of the insane, and must have received special training in clinical and research work, in pathology and psychopathology; must have made contributions to medical literature of insanity and must have knowledge of some foreign language, preferably German. He will have general supervision of the medical work at the hospital, supervision and care of the hydrotherapeutic departments, operating room and the training school for nurses; all transfers of patients will be made through him and he will be in charge of the clinical records and see that they are uniformly maintained, and be in position to offer suggestions that recent medical literature may contain among the lines of clinical psychiatry. Applicants must not be over 35 years of age at the time of the examination. Application should be made to the United States Civil-Service Commission, Washington, D. C., for form 304 and special form. No application will be accepted unless properly executed and filed on or before August 26.——The United States Civil-Service Commission announces an examination for assistant surgeon for Freedman's Hospital, Washington, D. C., at $1,500 per annum, at various places throughout the

United States. Applicants must be 20 years old or over at the time of the examination. The examination is open to all citizens of the United States, but it is understood to be the practice to appoint only colored persons to positions in the hospital. Application should be made to the United States Civil-Service Commission, Washington, D. C., for application form 1312.——Competitive examinations will soon be held under the rules of the United States Civil-Service Commission for pharmacist in the Public Health and Marine-Hospital Service, physician in Indian service, physician in the Isthmian Canal service, acting assistant surgeon in the Public Health and Marine-Hospital Service, and surgeon in the Coast and Geodetic Survey. Application forms and information in regard to this examination may be obtained by addressing the United States Civil-Service Commission, Washington, D. C., or the boards of examiners in Boston, Philadelphia, Atlanta, Ga., Cincinnati, Chicago, St. Paul, San Francisco, New York, New Orleans or St. Louis.

CANADA.

A Course in Hygiene at the University of Toronto.—The University of Toronto, during the next six weeks, will conduct a course in hygiene of twenty lectures. Dean Reeve of the medical faculty will take up the eye and ear; Dr. George R. McDonagh, the nose and throat; Dr. Charles Sheard, contagious and infectious diseases; Dr. Abbott, color blindness; Dr. William Oldright, general sanitation.

Canada's Nostrum Bill.—The Templeman bill respecting proprietary and "patent medicines" has passed the Canadian House of Commons. In these preparations the use of cocain has been prohibited, as well as the excessive use of alcohol. When a manufacturer prints the formula on each package the medicine will not come under the act, while if certain potent drugs are used the names must be printed on the label.

Annual Meeting of Ontario Medical Council.—The annual meeting of the Ontario Medical Council was held in Toronto during the week ended July 11. For some time a certain section of the public press has been calling on the medical council to do its duty with regard to certain members of the medical profession throughout the province who were suspected of operations for criminal abortion; and the fact that recently there had been several cases before the courts of the province brought this meeting of the council prominently in the public eye. The result is that the council has appointed a prosecution committee to investigate the cases of these practitioners. There will also be instituted an inquiry into the recent examinations, particularly the intermediate examination, in which examination over 65 per cent. of the candidates were "plowed" (rejected). An interesting item on the week's program was the presentation to a former member of the Council and a past president, Dr. C. T. Campbell, London, Ontario, of an illuminated address. Dr. Campbell was connected with the Council for twenty-five years and resigned a year ago to accept a position as postoffice inspector under the federal government. He also retired from active practice at the same time. There are now on the register of the Ontario College of Physicians and Surgeons 3,807 members in good standing. The following officers were elected: President, Dr. S. H. Glasgow, Welland; vice-president, Dr. E. A. P. Hardy, Toronto; registrar, Dr. John L. Bray, Toronto; treasurer, Dr. H. Wilberforce Aikins, Toronto.

FOREIGN.

Novarro Prize.—The assistants of Professor Novarro of Genoa have decided to endow a prize to be called by his name and awarded perpetually for works marking progress in general pathology. Novarro's election to the senate was the occasion of the movement.

The Absinthe Bill in France and Switzerland.—A bill prohibiting the manufacture and sale of absinthe recently came before the French senate, signed by 115 members, and it was referred to a committee of 18 members. The Swiss national vote of July 5 gave a majority of 100,000 in favor of the total prohibition of the manufacture, sale and storage of absinthe throughout the country.

Centennial of the Erlangen Medical Society.—At the festivities in commemoration of the centennial of the Physikalische-Medizinische Societät of Erlangen, Germany, the university conferred honorary degrees on Becquerel, Nernst, Horsley, Leube, Curtius and Kries, while 23 were appointed honorary members of the society, including J. J. Minot of Boston, Erb, Bier, Rutherford of Manchester, formerly of Canada, and Sherrington of Liverpool.

Venereal Disease Among the Young.—The *Allg. med. Ct.-Ztg.*, July 4, states that 8 per cent. of the 1,800 pupils of the gymnasia and technical high schools of Bohemia examined were found to have venereal disease, and that the percentage was still higher in the schools in the small towns. These figures are published in the *Zeitschrift zur Bekämpfung der Geschlechtskrankheiten*, the official organ of the National Preventive Association, to confirm anew the necessity for instruction of the young in respect to the venereal peril.

Plague in Venezuela.—According to the government Public Health Reports, plague still continues in Caracas. The government ordered 1,000 tubes of Haffkine's lymph and 2,000 tubes of Yersin serum. Aside from this and the disinfection and temporary closing of the infected houses, no measures have been taken to prevent the spread of the disease. Ordinary vehicles are used to carry the infected to the hospital and immediately afterward employed in the transportation of merchandise from one part of the city to another, the hospital itself being situated in the midst of a congested district within a few hundred yards of the stations of the Caracas and La Guayra and Puerto Cabello railroads. It is impossible to obtain authentic information from the interior.

First International First-Aid and Life-Saving Congress.—The advantages of international discussion were brought out most decidedly at this congress, which convened at Frankfurt a. M., June 13. It was decided to make these congresses a permanent institution, to meet every five years in one of the countries represented, with a standing international committee on life-saving measures. The next congress will be held in Vienna in 1913. Among the ten sections for first-aid and life-saving in drownings and accidents on railroads, in the city, country, etc., was one devoted to accidents in sports, and a communication was read by a German army surgeon on airship accidents and their prevention. Hüppe's on education of the public in prophylaxis of infectious diseases was summarized in THE JOURNAL, July 25, page 356, and Meyer's address on resuscitation of the drowned, for which he advocates a combination of the Silvester and Brosch methods. Marcus of Frankfurt a. M., related encouraging experiences in training children of the upper grades of school in first-aid work.

Robert Koch at the Antipodes.—Koch spent some time studying conditions at the leper colony during his stay at the Hawaiian Islands, where he was cordially welcomed by the profession. He reached Japan early in June, and was tendered a great reception by the scientific societies of Japan on the 17th at Tokyo, with a gala entertainment at the theater in the evening. The address at the reception by the surgeon-general of the army gave concrete examples of ways in which the public health of Japan had profited by Koch's direct suggestions, besides his indirect influence. He was greeted as "the inspirer of the students who are now the leaders of science in Japan." Everywhere the monogram "R. K." was seen with the flags of Japan and Germany and a profusion of flowers. Each guest was presented with a large envelope containing a booklet with portrait, describing Koch's work, a small box with a silver pin with his portrait in a red chrysanthemum, also two souvenir post cards, one showing the Institute for Infectious Diseases at Berlin, with maps presenting Koch's world-wide activity, the other with his portrait surrounded by bacilli, cocci, trypanosomes, etc. Koch described his work on sleeping sickness, emphasizing in conclusion the importance of taking Nature's workshop as one's laboratory, and the comparative fruitlessness of confining one's research within four walls. At both meetings it was proposed that Japan, to commemorate Koch's visit, should found a society for the combating of tuberculosis, and steps were taken to raise a subscription for Japan for the "Robert Koch Fund." This fund is growing apace, as has been mentioned in these columns, scientific societies, towns, cities, communities and individuals contributing to this international endowment for investigation and experiments on a large scale to combat tuberculosis. Carnegie's contribution is the largest single one yet received; the fund at last reports was over a quarter of a million of dollars.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, July 18, 1908.

A Year's Work of the Metropolitan Asylums Board.

The tenth annual report of the Metropolitan asylums board, which controls all the hospitals of the metropolis, has just been issued. The district served is 121 square miles and contains a population of 4,758,218. The board controls 51 institutions—16 hospitals for infectious diseases, 5 asylums for imbeciles, a land ambulance service of 8 stations, 167 ambulances and other vehicles, a river ambulance service with 3 wharves and 5 steamboats, a training ship with infirmary on

shore, and a shipping home, a school for children with ringworm, 2 schools for children with ophthalmia, 3 seaside homes for children, 6 homes for defective children, 3 homes for children remanded by magistrates, and a diphtheria antitoxin and bacteriologic establishment. The year 1907 will be memorable in the history of the board for the abnormal amount of infectious disease, particularly scarlet fever, which prevailed throughout the whole year. The total number of fever patients admitted into the hospitals of the board was no fewer than 32,169, or 6,165 in excess of the number of any previous year. The mortality of scarlet fever patients was but 2.8 per cent., having been as low only once previously. It is regretted that the number of cases of mistaken diagnosis is on the increase; no fewer than 3,111 such cases were admitted, as against 2,151 in the previous year. One of the most interesting tables in the report is that showing the probable causes of insanity in the patients admitted during the year. Nearly all the causes are physical—the two chief are congenital defects and old age. The former is given as the predisposing cause in 199 cases and as either predisposing or exciting in 115. Old age was responsible in 293 patients; intemperance was the cause in the cases of 7 men and 6 women; heredity in 29, and accident or injury in 3. Only 6 cases were due to moral causes.

A New Commission on Sleeping Sickness.

A new commission for the study of sleeping sickness is being organized to proceed to East Africa. It will continue the work carried on by the previous commission from 1902 until it was temporarily suspended in 1905 owing to the death of Lieutenant Tulloch, who contracted the disease during his researches in Uganda. Some time ago the secretary for the colonies, Lord Elgin, wrote to the Royal Society, asking if it would not be possible to continue scientific research on the spot, and it was decided to dispatch a new commission. This will be in charge of Col. David Bruce, F.R.S., whose researches on tropical medicine are so famous, and who will go to Africa for a second time in connection with this work. He will be accompanied by Captain Hamilton and Captain Bateman of the Army Medical Corps. The mission will proceed to Lake Victoria, on the northern shores of which the Uganda protectorate is preparing a laboratory within five or six miles of one of the concentration camps for the disease. The research will include the study of the natural history of the *Glossina morsitans* and of Koch's theory that crocodiles provide foodstuff for it. The commission will also investigate the question whether the lower animals harbor the parasites and the exact method by which the fly transfers the parasite. The latest returns show that there have been altogether 12 Europeans under treatment for sleeping sickness in England. Of these 4 died after suffering from the disease for periods ranging from twenty months to four years. Of the remainder, one, who was attacked seven years ago, is now well, while 5 others are officially described as "apparently well," the disease in these cases having lasted from fifteen months to three years. In a further case which has been under observation for six months the patient is said to have improved.

The Early Diagnosis of Cancer of the Uterus.

In order that sufferers from cancer of the uterus may receive the benefit of early treatment Dr. F. H. Champneys, at the request of the central midwives board, has drawn up a circular letter for the information of midwives. Stress is laid on the fact that no time should be lost. It is also pointed out that the menopause should not be accompanied by floodings or irregular hemorrhages of any kind. It is thus hoped that women generally will be educated as to the importance of seeking advice early, and the percentage of operable cases of cancer of the uterus increased. This result has been achieved by a similar campaign in Germany inaugurated by Professor Winter.

A Victim of the X-Rays.

The sad case of Dr. Hall Edwards, the pioneer worker in this country with the *x*-rays in their application to medicine, has been previously reported in THE JOURNAL. Some months ago his left arm was amputated for cancer following intractable ulceration of the hand. Now his right hand with the exception of the thumb has been removed. His sufferings have not quenched his enthusiasm for his work and he worked hard on the day preceding the operation. The operation was satisfactorily performed, but he is very weak, as his strength has been sapped and he has been able to obtain sleep only by the aid of narcotics. He has been granted by the government a "civil list" pension of $600 a year "in recognition of his devotion to radiography in its application to medical and surgical science." The medical profession and some others have also subscribed a fund for his benefit.

Food Preservatives.

Dr. Macfadden, who has had charge of a government inquiry on the subject of food preservatives, has presented an important report. He finds that foods packed in tin or in glass and hermetically sealed often contain food preservatives in considerable quantity. Inasmuch as fresh meat when cooked in suitable vessels requires no other protection against decomposition than being hermetically sealed, the inference is that the manufacturers who use preservatives do so either because the meat which they use is not fresh before it becomes the subject of their operations or because these are unduly protracted or are conducted under unsuitable conditions. Dr. Macfadden finds that the use of so-called preservatives is much promoted by the representations made to the manufacturers of canned meat by travelers for boron and other compounds. These sell antiseptics under names which throw no light on their composition. Sulphurous acids and certain sulphites have a considerable power of restoring the appearance of meat which is no longer fresh, and various boron preparations retard the appearance of the usual signs of decomposition. But such preparations do not prevent dangerous consequences to consumers. Fatal illness due to the *Bacillus enteritidis* has been produced by consumption of canned meat which showed no sign of decomposition. Dr. Macfadden is of the opinion that the use of chemical preservatives in foods enclosed in hermetically sealed cans should be absolutely prohibited.

BERLIN LETTER.

(From Our Regular Correspondent.)

BERLIN, July 1, 1908.

Cancer Research and the Campaign Against Cancer.

A success equal to that which has been attained in the campaign against tuberculosis can not be recorded for the fight against a malady no less dreadful, cancer. In this, unfortunately, we are still at the beginning of our efforts, but happily in the past few years efforts to protect mankind against this horrible scourge have been undertaken to an increased extent. The organization of the campaign was undertaken in Germany by a man who has repeatedly shown himself an excellent organizer, namely, Ernst v. Leyden. Just as the foundation of the German committee for the campaign against tuberculosis and the institution of the popular sanatoria against tuberculosis are essentially to be referred to his initiative, so we have also to thank him for the attempt to obtain fuller data regarding the distribution and origin of cancer by securing the interest of all classes concerned and to learn the means and methods of fighting it. At von Leyden's instigation a committee on cancer research was established in Berlin in 1900, at the head of which he was placed, and it succeeded in arousing the interest of physicians, of the government, and of the laity in the matter. Under his initiative, which was seconded by the general secretary of the committee (Prof. G. Meyer, Berlin), similar organizations were formed also in the other German states, so that some time ago a German central committee for cancer research could be organized. Finally, as a further result of his efforts, a combination of the committees, which meanwhile had been founded in other civilized countries, was effected and an international association for the investigation of cancer was on May 23 of this year formed in Berlin. The association includes all the thirteen countries which for the most part were represented by delegates at the meeting here (the United States of America by G. H. A. Clowes of Buffalo); unfortunately, England has not yet joined this association. As in political and commercial fields so in the field of scientific investigation, apparently, petty jealousies are not entirely to be avoided, although the common aim of scientific investigation ought to prevent such discords.

The International Association for Cancer Research has, according to the sketch of the constitution, the following purposes: 1. The promotion of institutions for research, as well as for the care of cancer patients, and the campaign against cancer. 2. The collection of uniform international statistics regarding cancer. 3. The formation of an international intelligence bureau for all questions regarding cancer research. 4. The publication of an internationnal journal for cancer research. 5. The preparation of international congresses on cancer. 6. The education of the public regarding the nature of cancer, in order that the laity may recognize it as early as possible.

Each country belonging to the association has the right to appoint ordinary members, the number of which is two for a population up to 10,000,000 and one for every additional million up to a maximum of five. To defray expenses each participating country must provide annually 100 marks ($24) for each ordinary member. E. v. Leyden was elected permanent honorary president; Czerny (Heidelberg), acting presi-

dent, and G. Meyer (Berlin), general secretary. The above-mentioned tasks of the international association have already been partly taken in hand by the Prussian committee. A statistical investigation of cancer was undertaken in Germany in 1900 and it was to be determined, by sending question blanks to all the German physicians, how many cancer patients were under medical treatment in the German Empire on a given date (Oct. 15, 1900). The results of this general investigation were published in 1902. They can only be regarded as inadequate as naturally the diagnosis could not be confirmed. It is safe to say that the statements of the physicians would have been shown to be false in not a few cases, when tested by competent expert examination or by the results of an autopsy. From this point of view an accurate statistic of cancer can be obtained only by means of the material of hospitals in which reliable clinical or pathologic investigators assure the correctness of the diagnosis.

Keeping in mind this important limitation, some interesting results can be derived from the material obtained by the German collective investigation. Altogether 25,376 physicians and institutions were interrogated; 14,060 (55 per cent.) sent answers. A total of about 12,000 patients with cancer were under treatment in Germany on the designated day. In the various districts of the country, the figures varied remarkably; in the case of men, 47 per million inhabitants (Schaumburg-Lippe) and 270 (in the district of Aix-la-Chapelle); in women from 65 (district of Bromberg) to 551 (Lübeck). The question whether there was a hereditary taint was answered in 9,147 cases, being denied in 83 per cent. of the cases and regarded as existing or as suspected only in 17 per cent. In 435 cases the attending physician suspected a conveyance of the cancer by infection. We must repeat that no binding conclusions can be drawn from these statements, and in this respect it is our opinion that the results of such a collective investigation do not correspond to the trouble and cost which they involve. Scientific investigation in this field can show somewhat better results from the introduction of experiment.

Ehrlich (Frankfort-on-the-Main), one of our most gifted scientists, whose services in the introduction of diphtheria antitoxin are much greater than is generally known, has published a series of investigations by which great light has been thrown on the origin and transference of cancerous tumors. Bashford in England, Borrel in Paris, Jensen in Denmark, Podwyssotzki in Russia, Loeb and Flexner in America, have worked effectively along the same lines. To be sure almost all the results of the investigation refer to the experimental cancer of animals, and we know how careful one must be in transferring such results to human pathology. Meanwhile it has been shown that the view of most pathologists that a parasite is not involved in the origin of cancer is remarkably sustained by animal experimentation, and that the problem of the development of cancer is connected only with cancer cells.

It is a long way from investigations regarding the pathogenesis of cancer to a successful campaign against the disease, and all attempts which have hitherto been made have produced indifferent results. A serum against cancer has not yet been discovered. Experiments with the ferments, with arsenic preparations and the like are not yet completed, and for the present the knife still remains the most successful remedy. Whether treatment with high tension sparks, recently recommended by the Marseilles physician, Keating Hart, for inoperable carcinoma (or as a preliminary to operation), will furnish favorable results and fulfill the hopes which it has aroused, remains to be seen. Radiotherapy has shown positive results only in cancer of the skin. In consideration of the relatively slight prospect of curing patients with cancer, especially when the disease is already somewhat advanced, it must be regarded as an urgent duty to keep the lay public informed regarding the nature of the disease and to urge them to secure timely medical treatment. The physicians of Germany in late years have repeatedly sought to secure action in this direction, and the gynecologists particularly have been active in promulgating the facts about the earliest signs of cancer by the so-called warning circulars (Merkblätter), which have been distributed by many thousands.

In addition to the task of bringing patients with cancer as early as possible under medical treatment, a second object must be considered, which from a social and humanitarian standpoint deserves equally great consideration, namely, the sufficient care of incurable cancer patients and (considering the possibility that cancer is communicable) the prevention of the spread of the disease. For this purpose stations for the care of cancer patients, analogous to tuberculosis dispensaries, have been established in some parts of Germany, in which incurable cancer patients are given medical advice and are cared for by nurses so far as possible. These dispensaries are attached to the institutions for cancer research where such have been established. At present this organization is not very extensive. In Germany there are three cancer institutes (in Berlin, Frankfort-on-the-Main and Heidelberg); the number of dispensaries for cancer patients also is still small.

VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, July 14, 1908.

Governmental Precautions Against Pellagra.

In the eastern parts of the empire a disease has been very prevalent among the poorer classes for some years past, which has proved puzzling to the profession. The clinical symptoms somewhat resembled those of lepra, but differed in not having the anesthetic patches with consequent dystrophic destructive processes. Profound cachexia with gastrointestinal disturbances are generally observed after the disease has persisted for from 12 to 18 months. In many instances these were the only symptoms, while in other cases circulatory disturbances are a prominent feature. Similar cases were reported from neighboring districts of Russia and Roumania, and many scientists studied the disease. It was finally agreed by the majority of the investigators that the cause of the condition lay in the food. The peasants live largely on maize, making bread and other foods out of this material; a dish called "polenta," consisting of coarsely ground maize with lard, is partaken of heartily daily. In certain wet years the corn was affected by a sporidium and became still more unwholesome because of the presence of certain toxic substances which are held responsible for the disease just described—pellagra. In the province mentioned, inhabited by 1,500,000 people, there were over 38,000 cases reported (3 per cent.). The government then established in every community bakeries in which bread from fresh flour was baked and distributed; each patient received daily a loaf weighing two and one-half pounds. In addition, the sick were given salt and meat for a period of from 16 to 40 weeks. Pamphlets were distributed which described in a popular way the cause of, and remedy for, the disease. The results have been gratifying. The scheme, which has been in force for two years, has resulted in 86 per cent. of the patients being benefited to such a degree that they are able to do their ordinary work; even in cases of from four to eight years' standing. In some districts the administration of a mixture of iron, arsenic and quinin was added to the dietetic and hygienic measures, but no marked superiority in the effects of the treatment was observed. [The discovery of the presence of pellagra in some of our own southern states has been chronicled recently in these columns. For example, see page 397, this issue.—ED.]

Public Health Statistics in Austria.

The public health statistics of Austria recently published contain some figures of interest to physicians. Thus in 1906 there were in Austria (population 26,000,000) 242 public hospitals and 485 private hospitals, with 52,000 beds, which were used by 640,000 patients. There was on an average one hospital bed to every 500 inhabitants, but the ratio varies (with the density of the population and the intelligence of the districts) from 1 in 1,260 to 1 in 111. Of the patients in the hospitals, 30,500 (5 per cent.) suffered from tuberculosis, with a mortality of 30 per cent. There were 14,600 cases of cardiac affections, with 3,900 deaths. Pneumonia (10,220 cases) proved fatal in 24 per cent. of the cases; diphtheria (6,900 cases) in 11 per cent.; 2,800 cases of scarlatina resulted in 530 deaths (12 per cent.). These figures refer to the hospital cases only. With reference to the insane, 42 hospitals (public and private) cared for 30,000 patients, with 2,100 cures and 2,920 deaths. Apart from the patients cared for in institutions, there were 18,200 lunatics cared for privately and 17,320 cretins or idiots. In 20 maternity hospitals, 25,600 mothers, with 20,740 infants, were cared for. Regarding the medical profession, there were 11,200 doctors of medicine (M.D.), of whom 6,820 held public appointments; the majority of the latter (62 per cent.) had, besides, the right to practice privately; the remainder had to devote their whole time to their official appointments. There were, too, 720 doctors of surgery (Ch.B.), of whom 70 per cent. were appointed to public office. The latter degree has not been granted since 1880, so that all these men had been in practice at least 26 years. The ratio of physicians to population was one to 2,050, but these figures are naturally variable. In Vienna there is one physician for each 650 inhabitants, while in Prague there is one to 520. In the flat country there was one physician to from 1,800 to 2,600 inhabitants, and in one place with a population of 9,260, there was but one physician.

Pharmacology

THE BROADER AIMS OF THE COUNCIL ON PHARMACY AND CHEMISTRY.

TORALD SOLLMANN, M.D.

Member of the Council, Professor of Pharmacology and Materia Medica at the Medical Department of Western Reserve University.

CLEVELAND, OHIO.

(*Continued from page 330.*)

XIX. DRUG-STORE THERAPEUTICS.

There is an old and international proverb that the shoemaker should stay by his lasts. There is a science of political economy which shows that the highest efficiency can only be attained by intelligent specialization. There is, too, a popular impression that the doctor who does the work of a druggist does not belong to the elect. Nevertheless, physicians do dispense. I do not refer, of course, to the occasional administration of a morphin, strychnin or nitroglycerin tablet; but to the systematic practice of the dispensing physician. I can understand how a physician may be forced into this; if the nearest drug-store is far away, or if his practice is so small that he must add to it in some way.

But short of actual necessity, why does he do it? Not that there is anything dishonorable about the profession of pharmacy, if it is properly carried on. It becomes dishonorable only when it is followed improperly or inefficiently. The pharmaceutical training of the ordinary medical course does not fit the physician to prepare emulsions or pills, or tablets which would be acceptable to patients. Of course, any one can count out tablets, or even pour a mixture from a bottle. Indeed, when a physician has arrived at the point where he is content to confine himself to the ready-to-wear prescription of the manufacturing houses, to the practice of drug-store therapeutics, he may as well adopt the other practices of the low-grade drug-store. Only let such a one drop all cant about "counter prescribing" on the part of the druggist. In what essential respect does his practice differ from that of the druggist, when both dispense the identical "anticoryza tablets," or "diarrhea mixture," or "anticonstipation pills," or "tonsillitis lozenges," or "antirheumatic improved?" In this respect only: The doctor knows better, if he would only stop to think; the druggist possibly does not. Who deserves the greater blame?

(*To be continued.*)

Dujardin-Beaumetz on the Problems of Therapeutics.—A Quarter Century Ago and To-day.

The following quotations from the introductory lecture on "Clinical Therapeutics" of the renowned French therapeutist are quite as apt to-day as they were when written, a quarter century ago. Evidently, therapeutics has not yet been purged of its unscientific features. Is it not time that it should be? The remedy exists—is there any good reason why it should not be applied?

"When occupied with therapeutics there are two dangerous rocks to shun: Skepticism on the one hand, exaggerated enthusiasm on the other. To believe too much, and not to believe at all are two opposite terms, but they are not so far apart as one might suppose. The one engenders the other, and extreme credulity gives rise to incredulity.

"Beware especially of skepticism. A physician who lacks faith in medicine has no more reason for existence than a priest who does not believe the religion he teaches, or a soldier who is destitute of love for his country and his flag. It is repugnant to reason and to conscience that he can be a good physician who judges of no utility all the remedial agents that have the sanction of tradition and custom. . . .

"Believe, then, in your art, but that this belief may be judicious, reasonable, let it not suffer you to be too easily carried away by what you may deem results of your medication; in therapeutics, illusions are indeed very frequent. This arises from numerous causes, especially from the propensity of the human mind to attribute all that eventuates favorably in the course of the disease to the medicine given, when very often it is only the natural evolution of the disease which the physician has observed.

"This explains to you why it has happened that certain remedies, exhibited with success in some epidemic and contagious diseases, in other seasons have failed to give as good results. This is an example of those therapeutic illusions which have cumbered the materia medica with so many drugs that have obtained a certain brief reputation in their day, soon to fall into forgetfulness and neglect, until another experimenter repeating the trials of a bygone time, restores them to passing notoriety.

"This celebrity, then; this decadence of remedial agents, are unfortunately facts of too great frequence in therapeutics. So after having pruned away all the useless and superfluous substances of the materia medica, if you retain only those which medical practice has consecrated by long usage, you will find that the really useful medicaments are much less numerous than one would suppose, and your daily practice will include but a few drugs. . . .

"Do not employ too many remedies at the same time; do not in your busy endeavors to serve your patient, inflict on him medicines and medications widely differing in their action. Study with care the disease which is before you; go back to the origin of the morbid affection; formulate the leading indications resulting therefrom; decide concerning the diatheses which have influenced the course of the malady, institute a plan of treatment and endeavor to carry it out with a very moderate exhibition of drugs. . . .

"This is not all: it is desirable that the physician should use the utmost care in prescribing his medicines. The hospital practice does not, unfortunately, favor this special study; we find ourselves in a particular situation which obliges us to formulate too rapidly and incompletely, so that after having followed for several years our hospital services, the most of you are entirely ignorant of the art of prescribing.

"This ignorance has more serious consequences than you think of, and if we see, in our day, the pharmaceutical specialties having a constantly increasing importance, it is in some measure due to the fact that physicians do not acquire that expertness in the preparation of their medicines which they ought to possess, and prefer lazily to rely on the combinations of the manufacturing chemist, trade-mark preparations, or even the nostrums of the charlatan.

"But, if by pursuing this course, the practitioner often promotes the fortune of the pharmacist, he despoils himself in the end, for the patron, beguiled by the advertisements which accompany his nostrum, is almost certain to apply in the future, not to his physician, but to the vender of the trumpeted drug.

"Learn, then, skilfully to prescribe, and not only to write in an orderly and judicious manner the substances which compose your prescription, but also to render the combination as pleasant to the taste as possible. Repudiate, therefore, in a general way, all the specialties which inundate the therapeutics of to-day. Exercise the greatest care in the directions which you give to the patient or his nurses; do not fear to enter into the minutest details; indicate how the external applications should be made, and the times for giving the internal remedies; regulate carefully the little incidents of the day, and be particular about the diet. For you must ever remember that pharmaceutical measures go but a little ways in the care of your patient, and that you can often accomplish more by hygiene than you can accomplish by medicine."

Casts of Infants' Stools.—R. Gaultier presented at the meeting of the Paris Pediatric Society, May 19, a collection of casts, reproductions of the stools of infants. Each was accompanied with a label describing the type: the meconium of the newborn; the normal stool of the breast-fed infant; of the child on sterilized milk; of the child with mucous enterocolitis; with acute bilious gastroenteritis, and the white stools of chronic gastrointestinal dyspepsia. The description noted also the number of stools in the twenty-four hours, the typical tint, quantity, aspect and consistency, odor, reaction, and microscopic, chemical and bacteriologic analysis, with the dietetic measures which each type should suggest. He thinks such casts would prove valuable for students, midwives, nurses and mothers, if such a collection were installed as an object lesson in children's hospitals, crèches, dispensaries, etc.

Correspondence

Hawaii as Seen by a Physician.

HONOLULU, T. H., June 10, 1908.

To the Editor:—Those of us who, by the influence of tradition, have believed the natives of the Hawaiian Islands to be cannibals, should be ashamed of ourselves. The records of the earliest missionaries show the Hawaiian a very decent fellow. The worst that may be said of the primitive Hawaiian is that he had implicit faith in the fish-luring properties of the hooks made from the bones of a deceased chief.

The *Kahuna* (native doctor) has passed into oblivion. Never again shall his Laau (primitive medicines) blister the smooth, tan skin or nauseate the stomach of a trusting patient. The *Kahuna*, with his charms and tricks, had to go; the *Kauka* (white doctor) has taken his place. To the wise, a word is sufficient, but a suggestion is all that is needed by the average native of these islands. As readily as he accepted Christianity, did he accept rational medicine. The *Kauka* is a great man.

With the exception of a few Chinese and Japanese, the medical profession of the islands is made up of white men, some of whom were educated in Europe. The majority, however, received their training in the United States. Many of them are members of the American Medical Association. This may be easily verified by a peep into the new directory of the Association.

Arriving here, I called on Dr. C. B. Cooper, ex-president of the Board of Health, and also the ex-president of the Board of Medical Registration. Told him I was going to the leper colony. "If you do," he said, "I hope you will not write it up." The territory recognizes no United States license or diploma. If you want to practice medicine within the islands of Hawaii you must pass the board.

The board is composed of three physicians appointed by the Board of Health. Calling at the office of Dr. Herbert, the president of the board, I introduced myself by explaining I was going to be on the islands for a time, and that while here would like the privileges of legal standing. He greeted me with that "Glad to meet you, old chap," cordiality, which characterizes the English gentleman. He was sorry the law required an examination regardless of credentials, but to save me the bother of waiting the next regular quarterly meeting, he would call a special gathering of the board. The examination was written. It covered the ground as thoroughly as any of the examinations within the United States, but with the fair-play exception that all "catch" or obscure questions were omitted. If successful, you must accept your license with the understanding that should you be guilty of unprofessional conduct, your license will be revoked. Surely, an ideal way of granting a license to practice medicine.

There is not an "irregular" in the territory. He who would dare to extol his ability *per vias* printer's ink, is a voluntary deserter from all that is true and good of medicine; and in consequence, pays the penalty of losing all right to his title of doctor. The newspapers of the islands have doubtless suffered on account of being deprived of publishing the advertisements and reproducing the picture of the fellow with the cure for leprosy. Really, in this respect I found the Hawaiian newspapers unique.

Including the bungalows of the various sugar plantations, there are many hospitals within the islands. Honolulu, with a population of 6,000 whites and Hawaiians, Chinese and Japanese enough to make an aggregate of 40,000, supports two hospitals, one maternity home and a sanatorium for the out-door treatment of tuberculosis. The principal hospital is situated in a grove of date and royal palms. It is a beautiful place. This institution was founded several years ago by Queen Emma. It still bears her name, although careless brevity has contracted it to "Queen's Hospital." Two resident physicians, Drs. Sexton and Hunt, assist during all operations, do the work of the chemical, microscopic and pathologic laboratories, and direct the nurses relative to the care of the patients. That this institution is well and scientifically managed I was afforded ample opportunity to observe.

In point of notoriety, leprosy undoubtedly heads the list. It is met in two varieties, i. e., tubercular and anesthetic. Each variety may be seen in different degrees of severity. So much has been written about the leper settlement at Kalawao, on the Island of Molokai, that word now might seem superfluous, yet in all that has been written, even to the article of our illustrious Senn, the writers seem to have been influenced by the literary possibilities more than the actual conditions as I have found them to exist.

The write-up which Jack London gave the place betrayed plot. No one but a novelist could have written such an article. But so much sensational "yellow" stuff had been written that one is willing to forgive London for turning the place into a House of Mirth. The conditions existing in any ward in Chicago or New York, in fact in any city, would be illustrative of the settlement at Kalawao. It is just a town of about 1,000 population. Instead of it being an Irish or German village, it is leper. Like the Irishman or German who never bothers himself about what he is, the average leper is equally as indifferent. Moreover, there are many things toward which he may "point with pride"; things achieved by fellow lepers. In the village are the well, the sick, the dying. A funeral is no more here than it is on State Street in Chicago. In that little house, back under the pali, a leper woman is being confined. One of the village doctors is with her. His obstetric technic is "aseptic." That his patient is a leper gives him no concern. He is not afraid to sit on the side of the bed and hold the hand extended to him during the pain. He may apply forceps, and at length, when the funis is cut and tied, in his own mind he may question the propriety of allowing this non-leprous infant to remain in the settlement. The children of leprous parents are almost invariably non-lepers. In the house just over the way, from the store, you hear music and a voice of natural sweetness from the throat of a leper Hawaiian girl, breaks into the hum of the settlement, while you stand mute listening to the familiar strains of "School Days," and when she sang "Let's Take a Trip on Memory's Ship," I wondered. Think of Molokai as you would of your own village; the good, the bad; the young, the old; the youth, the maid; the sick, the well; the strong, the weak; the rich, the poor; the workers, the drones; and you will have it right. It is not all mirth, as pictured by London, nor is it all gloom—just like the conditions at home, except that all are lepers.

My first trip to Kalihi, the detention hospital at Honolulu, was to examine, with Drs. Cooper and McDonald, two suspects who had just arrived. One of them was a young man, 18 years of age, who had the disease in one of its malignant forms. He was, notwithstanding his unsightliness, an intelligent boy and displayed wholesome modesty when asked to strip. Leprosy is not nearly so contagious as I was wont to believe before coming here, but many good reasons may be given for insisting on the segregation plan. The leper at large is thoroughly despised and shunned; he takes a new grip on life after having been admitted to the colony of his fellow lepers, for they are all glad to see him.

The islands are subject to outbreaks of plague, and the Board of Health is constantly waging war on the rats. Beriberi is quite common among the Orientals; I have seen a few cases, also one case of ankylostomiasis.

Like many of the diseases which crept from the internist to the surgeon before a cure was established, leprosy is looking toward the scalpel and sharp curette as instruments capable of checking its ravages. The good which follows the brisk scraping of a leprous ulcer is marvelous.

The Hawaiian race is rapidly becoming extinct. The statistics approximate one birth to every four women. At this rate the race will soon be gone unless it is that some occult necessity is demanding an installment of the law of natural selection. If so, the law has attacked the proliferating power alone, for ordinary infections, postoperative, are seldom seen. Union by first intention, even with a septic environment, is always expected. This immunity is believed by some due to the abundance of pure, ocean air. Others say it is seen only in the Hawaiian race.

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Book Notices

THE THEORY AND PRACTICE OF ANTIRABIC IMMUNISATION. By Captain W. F. Harvey, M.B., I.M.S., and Captain Anderson McKendrick, M.B., I.M.S., No. 30 of the Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. Paper. Pp. 43. Price 1s. 2d. Calcutta: Superintendent of Government Printing, India.

The authors consider that the essential point for the prophylactic immunization against hydrophobia is the introduction of a certain quantity of virus (measured by some method of standardization) within a given period, and that probably the different methods of immunization which are practiced in various institutes are not so divergent as might seem from the schemes. They suggest an arbitrary "unit" of the fresh rabic virus, this unit being the quantity contained in 0.2 c.c. of a 1 per cent. emulsion of fresh rabies material. With this scheme, then, 0.2 c.c. of a 1 to 1,000 dilution would contain 100 units, and 0.2 c.c. of a 1 to 10,000 dilution would contain 10 units. They then proceed to reduce the Högyes scheme of immunization, in which only fresh virus is used, to terms of units.

In order to express in units those systems in which the dried cord is used, it is necessary to determine the virulence of cords dried for different periods, as compared with the virulence of the fresh cord. In investigating this point they find that "the degree of infectivity of rabies virus is a function of the loss of weight in water caused by drying." They find: (1) That emulsion of nine day cord is little if at all infective in a dose of 0.2 c.c. of a 1 to 5 emulsion. (2) That emulsion of a five day cord is infective in minimal time in a dose of 0.2 c.c. of 1 in 100 emulsion, but becomes less so or not at all in a dose of 1 in 200 emulsion. (3) That in the same way the M. I. D. (minimum infective dose) for an emulsion of three day cord is 0.2 c.c. of a 1 in 200 emulsion. (4) That the M. I. D. of two day cord is not less than 0.2 c.c. of a 1 in 1,000 emulsion and probably not so great as 0.2 c.c. of a 1 in 2,000 emulsion. (5) That the M. I. D. of one day cord is not less than 0.2 c.c. of 1 in 4,000 emulsion and almost certainly not greater than 0.2 c.c. of 1 in 8,000 emulsion. (6) That fresh material is infective in a dose of 0.2 c.c. of a 1 in 8,000 dilution, and may be so in considerably higher dilutions even up to 1 in 40,000, but that with such high dilutions the experimental errors become so great as to exclude any more exact fixation of the M. I. D. On the basis of these determinations they express the Pasteurian treatment (Kasauli scheme) in terms of units.

Other interesting points are brought out, such as the fact that cord dried for nine days probably has little immunizing power, whereas that of the five day cord has considerable. The five-day cord might indeed be used for the whole treatment, but even this they regard as only a compromise, believing that the tendency is toward the exclusive use of fresh rabic material for the treatment. The work of recent years seems to show that the fixed virus is not infective for man, in spite of its immunizing power.

They take the position, but it would seem without sufficient experimental basis, that there is no such thing as a "rabies toxin."

DISEASES OF THE NOSE, THROAT AND EAR. By William Lincoln Ballenger, M. D., Department of Medicine, University of Illinois, Fellow of the American Laryngological Association. Cloth. Pp. 905, with illustrations. Price $5.50. Philadelphia and New York: Lea & Febiger, 1908.

A more thorough knowledge of the pathology of the diseases of the ear and the etiology of the same has closely united the specialty of otology with that of rhinology so that it is but natural that the text-books should follow the lead of the specialists themselves and embrace the nose, throat and ear. Ballenger's book is a valuable contribution to the literature on this subject. The book is divided into four sections, Part 1 being devoted to the nose and accessory sinuses. The first three chapters contain a general discussion of the subject and describe the office equipment. The deviation of the septum is then discussed in a very masterly manner. One especially good point the author brings out is the variety of operations for the correction of this deformity, stating that no one operation can be suited to all cases, and as the various operations are described in detail, the reader is in a position to select the operation which is fitted for his individual case. He then devotes three chapters to the consideration of the nasal accessory sinuses. The only criticism that we could find with this section of the work is that the author presupposes a knowledge of anatomy on the part of the reader as the minute anatomy of the sinuses is not thoroughly brought out. However, a sufficient amount of anatomy is given to allow the reader to understand the points which the author desires to make.

Part 2 is devoted to the pharynx and fauces and deals with the various inflammations and functional neuroses of the pharynx. Four chapters are devoted to the consideration of the tonsil, the surgical one being especially complete. Part 3 covers the larynx and contains a chapter on the newer methods of bronchoscopy. Part 4 is devoted to the ear. It deals with the functional tests of hearing, the general etiology of defective hearing and the various inflammatory diseases.

The mastoid operations and various complications are described in detail and form a very valuable portion of the work. One excellent point in the work is the way in which the various operations are illustrated step by step, so that the reader may obtain a clear idea of the text and associated drawings. The book is well adapted to the practical wants of the physician wishing to make a specialty of this subject, but, as above mentioned, presupposes a thorough knowledge of the anatomy of the parts.

PHARMACOLOGY. By Maurice Vejux Tyrode, M.D., Instructor of Pharmacology in the Medical School of Harvard University. Cloth. Pp. 255. Price, $1.50. Philadelphia: P. Blakiston's Son & Co., 1908.

By careful selection of the positively known facts and rejection of vague and contradictory statements of no importance, and by a systematic arrangement of his material the author has produced a text-book which should be welcomed by teachers of pharmacology. The remedies are arranged in groups and a careful summary of the group action of each group is given. The therapeutic applications are brief and easily remembered by the student. There is less detail in the matter of administration and use of remedies in external applications than is desirable, unless this lack is to be supplied from some other source. Unfortunately the nomenclature of the Pharmacopeia is only imperfectly followed. Thus while carbolic acid is given its proper name, Phenol, we have Unguentum Acidi Carbolici and Glyceritum Acidi Carbolici. Moreover, the unguentum is given as 5 per cent. instead of 3 per cent., which is official. The phenolsulphonates are listed as sulphocarbolates with no hint of their official names. Thymol is put down as Thymolum, U. S. P., from which the student would naturally learn to write Thymoli iodidum instead of Thymosis isodidum. These errors will undoubtedly be corrected in the second edition, to which we expect that this book will soon attain.

THE HEALING OF THE NATIONS. By J. Rutter Williamson, M.B., Edin. Cloth. Pp. 95. New York: Student Volunteer Movement for Foreign Missions, 1899.

An earnest and cogent presentation of the need for medical missionary work, its opportunities and possibilities. Statistics and a bibliography add to its value while illustrative stories and descriptions enhance the interest.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

TRANSMISSION OF BOVINE TUBERCULOSIS TO MAN.

To the Editor:—In reply to the inquiry of Dr. E. J. Brady, Kalamazoo, Mich., regarding the transmission of bovine tuberculosis to human beings (*The Journal*, May 9,1908), you state that the question is not yet settled. I had supposed that the reports of the German commission and of the English royal commission had finally laid at rest any doubts which may have been held on this subject. Will you be good enough to give me references to articles by any one within the last five years who still believes that the bovine bacillus can not produce tuberculosis in the human being?

MAZYCK P. RAVENEL, Madison, Wis.

ANSWER.—We are grateful to Dr. Ravenel for calling attention to the fact that our answer, to which he refers, might possibly lead to misunderstanding in a question of such practical importance. Our answer, however, was not intended to deny the occurrence of infection of man with tubercle bacilli of the so-called bovine type. We were perfectly aware that such occurrence has been proved by ample experiments. Koch even, who by his speech in London (1901) started the discussion of this question, did not deny that the bovine bacillus can produce tuberculosis in man, neither does his school. But they do hold that this is a relatively rare event, so much so as to make it a negligible quantity in prophylaxis, the principal source of infection being the consumptive individual. Weber, on page 5 in the 1907 volume of the "Tuberkulose Arbeiten aus dem Kais. Gesundheitsamt" still insists on the rarity of bovine infection in man. Last year, in Section I of the Fourteenth International Congress of Hygiene and Demography, the subject was thoroughly discussed. Kisskalt (*Deutsch. Med. Wchnschr.*, 1907, xxxiii, 1719), in his report of the deliberation, insists that both the principal papers (Arloing, Flügge, Ravenel, Ribbert, von Schrötter) and the discussion "showed that in the course of the last years, in spite of the enormous amount of work done on the subject there has not taken place a clearing of opinion in one single point." The report of the English commission has also not been able to disprove the theory that "the great distribution of consumption is due in the preponderant majority to infection from human sources, it has on the contrary furnished new proofs for it." (Kossel, *Deutsche med. Wchnschr.*, 1908, xxxiv, 180.) Therefore, while the question of transmissibility of bovine tuberculosis to man is absolutely settled from a scientific standpoint, there is still some question as to its practical importance. But the warfare against bovine tuberculosis, in which Dr. Ravenel is so prominently engaged, is based on sufficient theoretic and practical evidence. It would be a great calamity if less vigorous measures, especially as regards the meat and milk supplies, were to be enforced on account of certain unsettled points.

AN EFFICACIOUS TOOTHACHE REMEDY.

DR. T. W. WILLIAMS, Milwaukee, writes that he has discovered a quick, safe and reliable remedy for toothache in the following combination: "Make a mixture of 55 parts of alcohol and 45 parts of oil of cloves. To seven parts of this mixture add one part of chloroform. To one ounce of this compound add 4 grains morphin and 4 grains cocain. Apply with a small pledget of cotton. If the ache returns, repeat. Two or three applications will usually permanently relieve the trouble."

This would be approximately represented by the following prescription:

R.	gm. or c.c.	
Alcoholis	15|4	or f℥ss
Olei caryophylli	12|6	f℥iiiss
Chloroformi	4|0	f℥i
Morphinæ		
Cocainæ	0|26	āā gr. iv

M. et Sig.: Apply on small pledget of cotton.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending July 25, 1908:

Mason, C. F., maj., M. C., detailed to represent the Medical Department of the army at the meeting of the American Public Health Association, Winnipeg, Manitoba, Canada, Aug. 25 to 28, 1908.

Harris, H. S. T., maj. M. C., granted an extension of ten days to his leave of absence.

Johnson, R. W., maj., M. C., left Havana, Cuba, on leave of absence for one month in the United States.

King, Edgar, first lieut., M. C., relieved from further duty in the Philippines Division and assigned to duty in the Army Transport Service, with station at San Francisco.

Bayly, R. C., first lieut., M. R. C., ordered to Ft. D. A. Russell, Wyo., for duty.

Dear, W. R., first lieut., M. R. C., ordered to A. G. H., Washington, D. C., for duty.

Woodbury, F. T., capt., M. C., ordered, at the expiration of his present leave of absence, to Ft. Assiniboine, Mont., for duty.

Hammond, W. G., dent. surg., left Whipple Barracks, Ariz., for duty at Fort Huachuca, Ariz.

Tignor, E. P., dent. surg., left Pine Camp, N. Y., for duty at Ft. Jay, N. Y.

Waddell, R. W., dent. surg., arrived at Ft. Slocum, N. Y., for duty.

The following named first lieuts. M. R. C., recently appointed from contract surgeons, U. S. A., with rank from July 7, 1908, are ordered to active duty July 22, 1908, in the service of the United States, and are assigned to duty at their present stations: Adair, G. F., Barney, F. M., Bell, L. P., Brewer, I. W., Card, D. P., Chase, A. M., Chase, C. L., Conzelmann, F. J., Drake, P. G., Dunbar, L. R., Enders, W. J., Freeland, H. L., Gracia, L. C., George, W. R. S., Graves, L. K., Griffis, F. C., Griswold, W. C. Halliday, F. A., Harmon, D. W., Harris, H. I., Hart, J. W., Hart, W. L., Hasseltine, H. E., Henning, O. F., Jarrett, A R., Johnson, C. W., Kennedy, J. S., Love, J. W., McCallum, F. M., MacDonald, C. E., Magee, J. C., Marvin, M. F., Miller, A. L., O'Day, S. F., Peck, L. B., Pinquard, Jos., Reagles, Jas., Roberts, E. E., Sanford, J. L., Slater, E. F., Stearns, C. H., Stockard, J. K., Suggs, Frank, Tenney, E. S., Trotter-Tyler, Geo., Tuttle, A. D., Wall, F. M., Watkins, V. E., Wertenbaker, C. I., Weston, H. R., Whitney, Walter, Wiggin, D C., Woolley, H. C., Wren, R. J., Yemans, H. W.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending July 25, 1908:

Hoen, W. S., P. A. surgeon, ordered to Washington, D. C., and report to the Bureau of Medicine and Surgery, Navy Department, for further orders, when discharged from treatment, at the Naval Hospital, Mare Island, Cal.

Strite, C. E., asst.-surgeon, detached from the *Franklin* and ordered to the Naval Hospital, Norfolk, Va.

Cole, H. W. Jr., asst.-surgeon, ordered to the Navy Yard, Charleston, S. C.

Stalnaker, P. R., asst.-surgeon, ordered to the Naval Hospital, Annapolis, Md.

McGuire, L. W., asst.-surgeon, detached from the Navy Yard, Charleston, S. C., and ordered to the *Montana* when commissioned.

Bishop, L. W., passed asst.-surgeon, detached from the naval recruiting station, Indianapolis, and ordered to the Naval Hospital, New York, for treatment and observation.

Crow, G. B., Clifton, A. L., Phelps, J. R., asst.-surgeons, commissioned assistant surgeons from July 15, 1908.

Biddle, C., medical inspector, detached from the marine recruiting station, Philadelphia, ordered home and granted leave for two months.

Sutton, D. G., asst.-surgeon, detached from the naval hospital, Newport, R. I., and ordered to the *Franklin*.

Rhoades, G. C., detached from the *Franklin* and ordered to the *Scorpion*.

Public Health and Marine-Hospital Service.

List of changes of station and Duties of commissioned and noncommissioned officers of the Public Health and Marine-Hospital Service for the seven days ended July 22, 1908:

Mead, F. W., surgeon, directed to proceed to Tuckerton and Atlantic City, N. J., for the purpose of examining keepers and surfmen of the Life-Saving Service, on completion of which to rejoin his station at Savannah, Ga.

Wasdin, Eugene, surgeon, granted leave of absence for one month, from Aug. 1, 1908.

Clark, Taliaferro, P. A. surgeon, directed to proceed to Lebanon, Pa., for special temporary duty, on completion of which to rejoin his station at Philadelphia.

Schereschewsky, J. W., P. A. surgeon, directed to proceed to Ocean City, Md., and Chincoteague, Wachapreague and Cape Charles City, Va., for the purpose of examining keepers and surfmen of the Life-Saving Service, on completion of which to rejoin his station at Baltimore.

Bahrenburg, L. P. H., P. A. surgeon, directed to proceed to Point Pleasant, N. J., for the purpose of examining keepers and surfmen of the Life-Saving Service, on completion of which to rejoin his station at Ellis Island, N. Y.

Ebert, H. G., asst.-surgeon, relieved from special temporary duty at San Francisco and directed to report to medical officer in command, San Francisco Quarantine Station, Angel Island, Cal., for duty and assignment to quarters.

Mullen, E. H., asst.-surgeon, granted leave of absence for 2 days, from July 15, 1908, on account of sickness.

Clark, E. S., acting asst.-surgeon, leave of absence granted Acting Assistant Surgeon Clark for ten days, from June 11, 1908, amended to read for six days, from June 15, 1908.

McGinnis, R. H., acting asst.-surgeon, granted leave of absence for 15 days, from Aug. 17, 1908.

Safford, M. V., acting asst.-surgeon, granted leave of absence for 5 days, from July 14, 1908, under Paragraph 210, Service Regulations.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended July 24, 1908:

SMALLPOX—UNITED STATES.

Alabama: Mobile, June 27-July 4, 1 case, imported.
California: Los Angeles, June 27-July 4, 1 case.
Illinois: Chicago, July 4-11, 1 case.
Indiana: Indianapolis, July 5-12, 2 cases.
Kansas: Topeka, June 27-July 4, 7 cases.
Kentucky: Covington, July 4-11, 1 case.
Louisiana: New Orleans, July 4-11, 2 cases.
Maryland: Baltimore, July 4-11, 1 case.
Michigan: Detroit, July 4-11, 1 case.
Missouri: Kansas City, July 4-11, 1 case; St. Joseph, June 27-July 11, 2 cases.
Ohio: Cincinnati, July 4-11, 1 case.
Texas: San Antonio, July 4-11, 1 case.
Washington: Spokane, June 27-July 4, 8 cases.
Wisconsin: La Crosse, July 4-11, 7 cases.

SMALLPOX—INSULAR.

Philippine Islands: Manila, May 23-June 6, 15 cases, 9 deaths.
Porto Rico: Mayaguez, June 20-27, 2 cases.

SMALLPOX—FOREIGN.

Canada: Halifax, June 25-July 4, 6 cases.
China: Hongkong, May 23-June 6, 7 cases, 4 deaths
Ecuador: Guayaquil, June 13-20, 6 deaths.

France: Paris, June 20-27, 2 cases.
India: Calcutta, May 23-30, 20 deaths.
Italy: General, June 21-28, 49 cases; Palermo, June 6-20, 6 cases, 2 deaths; Turin, June 7-14, 1 case.
Mexico: Mexico City, May 16-30, 47 deaths.
Russia: Moscow, June 13-20, 32 cases, 5 deaths; Odessa, May 23-June 20, 23 cases, 2 deaths; Warsaw, May 16-23, 4 deaths.
Spain: Barcelona, June 1-30, 3 deaths; Valencia, June 20-27, 9 cases, 1 death.
Turkey: Constantinople, May 22-29, 6 deaths.

YELLOW FEVER.

Cuba: Daiquiri, June 18-20, 3 cases.
Curaçao: June 26-July 3, 1 case, 1 death.
Ecuador: Guayaquil, June 13-20, 1 death.

CHOLERA

India: Calcutta, May 23-30, 81 deaths.

PLAGUE.

British Gold Coast: Akkra, May 26, 3 cases, 3 deaths.
Chile: Antofagasta, May 30, 18 cases, 2 deaths; Arica, June 2, present.
China: Hongkong, May 23-June 6, 271 cases, 221 deaths.
Ecuador: Guayaquil, June 13-20, 1 death.
India: General, May 9-June 6, 1,409 cases, 1,196 deaths; Calcutta, May 23-30, 60 deaths; Madras, May 3-June 5, 4 deaths.
Japan: Nara, June 24, 14 cases.
Peru: General, June 13-20, 18 cases 10 deaths.
Straits Settlements: Singapore, May 23-30, 1 death.
Trinidad: June 22-July 1, 4 cases.
Venezuela: La Guaira, June 30, 1 death.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Providence Court of Foresters Abolishes Contract System.

Elmwood Court No. 30, Foresters of America, of Providence (R. I.), has decided to cancel its contract with a local physician for lodge practice, and hereafter to allow each member of the lodge to employ his own physician and to send the bill for medical services to the lodge. Elmwood Court has employed a lodge physician for eighteen years, paying $1.50 per member per year, making a yearly average of $180 to the physician. According to the Woonsocket (R. I.) *Evening Call*, in which the announcement of the action of the lodge appears, there is no criticism whatever of the work done in the past by the lodge physician. The lodge has decided, however, that the contract system is not the best way of securing proper services for its members.

This action is most interesting as evidence of the realization on the part of fraternal organizations that the contract plan is pernicious and harmful, to physician, individual member and lodge, and that it inevitably tends to cheap work and poor results. If the fraternal organizations once thoroughly realize that the existing plan of contract practice is poor economy, they will speedily abolish it themselves and will substitute therefor a fair and equitable means of compensating physicians employed by them to attend their members. So long as the physician is paid a proper price for his services, such as will enable him to give his patients the care and attention to which they are entitled, there is no reason, either ethically or legally, why an agreement should not be made with an organization the same as with an individual. The pernicious features of lodge practice, as has been emphasized repeatedly in THE JOURNAL, are that the physician is required to give an unlimited amount of services for a limited compensation; that the compensation is, in the great majority of cases, ridiculously inadequate and that a ruinous and pernicious element of professional competition is introduced between physicians.

If fraternal organizations will select physicians by competitive examination or on account of demonstrated ability instead of through political or personal influence; if they will so arrange their plan of compensation that the physician is paid in proportion to the amount and value of services rendered and if they will fix this compensation at an adequate and proper figure, then a fraternal organization will have as much right to employ a physician to attend its members as a corporation has to employ a surgeon to examine its employés. The fact should be clearly kept in mind that the pernicious feature of lodge and contract practice is not in the fact that a contract exists with the lodge, but that the contract with the lodge is unfair to all parties concerned, and that under it it is impossible for the patient to secure the kind of professional services to which he is entitled.

Dr. Reed Announces His Views on Public Health.

Dr. Charles A. L. Reed of Cincinnati, in response to a petition from Republican electors of Ohio, has consented to become a candidate for United States Senator from Ohio. At a dinner tendered him at Cincinnati, July 15, Dr. Reed announced his views on various questions of public interest, among them being the following statement reg. rding pure food and drugs:

My long years of identification with the agitation that preceded the passage of the national law to insure pure food and drugs to the American people must be accepted as an earnest of my intention to continue my support of the measure, whether I am in or out of Congress. It must not be forgotten that the opposition to this beneficent legislation came from powerfully capitalized interests engaged, as many of them are yet engaged, in the manufacture of fraudulent products now hardly less fraudulent because they carry labels that are meaningless to all but a few. In this and many other particulars the law should be strengthened, while it should at all times be protected from that specious form of amendment which while assuming to strengthen is really intended to weaken if not destroy its force—a form of amendment with which we became all too familiar during the efforts to secure the enactment of the legislation.

On the organization of a national department of public health, Dr. Reed was equally emphatic. He said:

The greatest asset of the people is their productive energy. Its general conservation can be effected only by the general conservation of the public health. The importance of this fact can be imagined when it is remembered that the loss to the American people from preventable diseases—entirely preventable diseases such, for instance, as consumption and typhoid fever, amounts to billions of dollars annually. The existing national agencies for the correction of this condition are to-day insufficient in numbers, inadequate in powers, and scattered over the various department of the government, they lack organization and effectiveness. In view of this fact I have for years advocated and now advocate the line of action expressed in the present Ohio Republican platform and submitted with Secretary Taft's approval to the Chicago convention, by which it was reaffirmed in general terms to the effect that all existing national public health agencies ought to be organized into a single national public health department.

Tennessee Democratic Convention Adopts Health Planks.

The Tennessee State Democratic Convention, which recently met in Nashville, adopted as one of its planks the following:

We favor the consideration and strict enforcement of the pure food and drug law of 1907, and to properly protect the people from misbranded food produce and the deleterious effects thereof, we favor any additional legislation and sufficient appropriation to equip properly and scientifically a state pure food and drug laboratory.

The following plank regarding the work of the State Board of Health and the prevention of tuberculosis was also adopted:

We heartily approve and commend the efforts of the municipal and county officials and physicians of the state to prevent the spread of tuberculosis and pledge ourselves to cooperate in this important and necessary work. We further favor the building of a hospital for consumptives at the main prison which will separate them from healthy convicts so as to prevent the spread of consumption among the inmates of our state prison. We endorse the efforts of the State Board of Health to prevent epidemics and the spread of communicable diseases, and favor all necessary appropriations to do the work.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.
BOWLING GREEN, KENTUCKY.

The second year of the course of postgraduate study begins the first week in September. In order that the course may be as uniform as possible, all societies expecting to hold weekly meetings should plan to begin the work at this time. Notify

the director at once how many outlines will be required, and whether they are desired in blank form or printed for the individual society. In this way the topics may be assigned, and the society in working order at the beginning of the study year.

Only ten months are included in the outline for the second year, so that each society may provide for a two months' vacation during the year.

The remaining portion of the program for the first year will appear in THE JOURNAL during the next three weeks in order that its publication may be completed before the second year's course begins. During the coming year the weekly programs will be published two weeks in advance in order to allow more time for preparation.

Eleventh Month.

THIRD WEEKLY MEETING.

Movable Kidney.

Etiology: Sex, age, right side. Emaciation, multiple pregnancies, lacing, traumatism, renal tumors. Enteroptosis.

Diagnosis: General symptoms. Dietl's crisis. Physical examination. Movable kidney, floating kidney. Differentiate from tumor of gall bladder, from wandering spleen, from ovarian or intestinal tumors. Differentiate Dietl's crisis from renal, hepatic or intestinal colic, appendicitis, acute obstruction of bowel.

Acute Nephritis.

Pathology: Gross changes slight or extreme. Microscopic changes (a) in glomerulus, (b) in tubular epithelium, (c) interstitial changes.

Symptoms: Onset, chill, fever, pain, gastric disturbance, dropsy and puffiness, convulsions. Urine: quantity, specific gravity, color, reaction, albumin, microscopic examination. General symptoms: Edema, ascites, hydrothorax, hydropericardium; pulse and heart, blood: uremic manifestations. Variations in clinical course. Duration, terminations.

Chronic Parenchymatous Nephritis.

Definition and Synonyms.

Etiology: Age and sex. Secondary to acute nephritis; alcoholic and malt liquors; association with amyloid disease in syphilis, tuberculosis and chronic suppurations.

Pathology: Gross and microscopic changes in (a) large white kidney, (b) small white kidney, (c) kidney of chronic hemorrhagic nephritis.

Treatment: Dietetic, eliminative. Anemia, heart and pulse. Dropsy. Diuretics.

FOURTH WEEKLY MEETING.

Albuminuria.

Etiology.

1. Lesions of urinary organs, acute and chronic nephritis, renal degenerations and tumors, suppuration in pelvis, ureter and bladder, toxemias, scarlet fever and gout.
2. Slight or undemonstrable lesions. (a) Functional, physiological, after eating, exertion, violent emotions, bath. (b) Cyclic, age, associated conditions. (c) Febrile. (d) Hemic changes, purpura, syphilis, leukemia, etc. (e) Neurotic. (f) Orthostatic.

Prognosis: Bearing of cause, age, arterial tension, casts, general condition, influence of digestion.

Chronic Interstitial Nephritis.

Pathology: Gross changes, size, weight, capsule, surface, color, section. Microscopic changes: (a) increase in fibrous elements, (b) glomerular atrophy, (c) changes in tubules. Associated pathology, arterial, cardiac. Discuss fully.

Symptoms: Gradual insidious onset. Development of uremic symptoms, dyspnea, loss of flesh.

Urinary System: Urine, quantity, specific gravity, albumin, casts, blood cells.

Circulatory System: Physical examination, cardiac hypertrophy, high tension pulse. Freezing point of blood. Symptoms of broken compensation later.

Respiratory System: Epistaxis, edema of larynx, hydrothorax. Dyspnea, cardiac or uremic, nocturnal. Bronchitis and edema of lungs.

Gastrointestinal disorders.

Nervous System: Headache, drowsiness, stupor, convulsions. Meningitis and apoplexy, "shifting paralyses," "dead finger."

Special Senses: Retinitis, amblyopia, amaurosis. Tinnitus, deafness, vertigo.

Nephritic Colic.

Diagnosis: Onset of pain, character, radiation, tenderness. General symptoms. Duration and terminations. Differentiate from biliary colic, intestinal colic, appendicitis.

Treatment: Heat, locally, internally, baths. Posture. Physiologic and therapeutic effects of morphia, chloroform.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

CALIFORNIA State Board of Medical Examiners, Cooper Medical College, San Francisco, August 4-6. Secretary, Dr. Charles L. Tisdale, Butler Bldg., San Francisco.

NEBRASKA State Board of Health, State Capitol Building, Lincoln, August 5-6. Secretary, Dr. E. J. C., Sward, Oakland.

Nebraska May Report.

Dr. E. J. C. Sward, secretary of the Nebraska State Board of Health, reports the written examination held at Lincoln, May 27-28, 1908. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 71, of whom 63 passed and 8 failed. Twenty-eight reciprocal licenses were issued at this examination. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
College of P. and S., Chicago	(1900)	78.1
Northwestern Univ. Med. School	(1908)	85.8
Ensworth Med. Coll.	(1908)	81.7
Nebraska School of Med.	(1908)	76.6
Creighton Med. Coll. (1908) 76.3, 79.1, 79.7, 79.6, 80.2, 80.2, 80.6, 81, 81.2, 82.6, 83.1, 83.1, 83.5, 83.6, 85.2, 85.3, 86.2, 86.2, 86.7, 86.8, 87.1, 87.3, 87.6, 88.3, 89.6		
University of Nebraska (1908) 79.1, 79.6, 80.2, 81.7, 82.1, 82.1, 82.2, 82.2, 83.2, 83.2, 83.7, 83.7, 83.7, 84.1, 84.1, 85.8, 85, 86.6, 86.6, 87.8, 89.3, 91.3, 91.7		
Lincoln Med. Coll (1908) 78.8, 79.7, 81.7, 83.1, 83.2, 83.5, 83.6, 84.5, 84.6, 85.2, 86		

FAILED.

Creighton Medical College	(1907) 59.2;	(1908) 63.5, 67.7*,	71.2
Nebraska School of Med.	(1907) 58;	(1908)	68.2
Meharry Med. Coll.		(1908)	72.1
Western Med. Coll., London, Ontario		(1906)	69.3

LICENSED THROUGH RECIPROCITY.

College.	Year grad.	Reciprocity with.
University of California	(1865)	Missouri
Howard University, Washington	(1895)	Iowa
Northwestern Univ. Med. School, (1894) Iowa;	(1907)	Illinois
Hahnemann Med. Coll. and Hosp., Chicago	(1904)	Illinois
Rush Med. Coll.	(1906)	Illinois
Central Med. Coll., St. Joseph, (1900) Missouri;	(1902)	(1904) Kansas
Keokuk Med. Coll.	(1891)	Iowa
Keokuk Med. Coll., Coll. of P. & S.	(1900)	(1904) Iowa
University of Iowa	(1895)	(1906) (1907) Iowa
Sioux City Med. Coll.	(1907)	Iowa
Kentucky School of Med.	(1904)	Iowa
Johns Hopkins Med. School	(1905)	Maryland
Coll. of P. & S., Baltimore	(1880)	Kansas
University of Minnesota	(1906)	Minnesota
Marion Sims Coll. of Med.	(1897)	Iowa
Ensworth Central Med. Coll.	(1907)	Kansas
Kansas City Med. Coll.	(1904)	Kansas
Kansas City Hahnemann Med. Coll.	(1903)	Kansas
St. Louis University	(1906)	Illinois
Creighton Med. Coll.	(1907)	Iowa
University of Nebraska	(1903)	Iowa
University of Pennsylvania	(1870)	Missouri

* Second examination.

Delaware June Report.

Dr. H. W. Briggs, secretary of the Medical Council of Delaware, reports the written examination held at Dover, June 16-18, 1908. The number of subjects examined in was 10; total questions asked, 100; percentage required, 75. The total

number of candidates examined was 7, all of whom passed. Two reciprocal licenses were issued at this examination. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
University of Maryland.....(1888)	80.4; (1905)	84.7
University of Pennsylvania.....	(1908)	91.6
Jefferson Med. Coll.....	(1906)	81.2
Hahnemann Med. Coll., Philadelphia.....	(1904)	89.
University Coll. of Med., Richmond.....	(1908)	86.7, 90.7

LICENSED THROUGH RECIPROCITY.

College.	Year grad.	Reciprocity with.
University of Naples.....	(1899)	Maine
Jefferson Med. Coll.....	(1907)	Maryland

Minnesota June Report.

Dr. W. S. Fullerton, secretary of the Minnesota State Board of Medical Examiners, reports the written examination held at St. Paul, June 10-12, 1908. The number of subjects examined in was 17; total number of questions asked, 195; percentage required to pass, 75. The total number of candidates examined was 61, of whom 49 passed and 12 failed. Fifteen reciprocal licenses were issued at this examination. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
Northwestern Univ. Med. School.....	(1908)	80.7, 87.9
Hamline University (1906) 76.2; (1908) 75.2, 77.4, 78.7, 79.2, 79.3, 80, 81.5, 81.8, 82, 82.2, 82.3, 82.7, 83.1, 85.2, 85.4, 86.1.		
University of Minnesota (1907) 78.6; (1908) 75.5, 76, 76.9, 78.1, 78.3, 78.8, 78.8, 79.4, 79.4, 79.8, 80.5, 81, 81, 81, 81.2, 82, 82.1, 82.1, 82.3, 84, 84.1, 84.1, 84.4, 84.7, 85.4, 85.7.		
University of Pennsylvania.....	(1908)	80.8, 84.5
University of Catania, Italy.....	(1904)	78.

FAILED.

Chicago Coll. of Med. and Surg.....	(1905)	67.6
Hamline University (1907) 65.7; (1908) 63, 60.7, 74.1, 73.5, 73.9, 74.3.		
University of Minnesota.....	(1908)	67.6, 70.1, 71.4, 72.9

LICENSED THROUGH RECIPROCITY.

College.	Year grad.	Reciprocity with.
College of P. and S., Chicago.....	(1893) (1904)	Wisconsin
Rush Med. Coll.....	(1904) (1906)	Illinois
Northwestern Univ. Med. School.....	(1904) (1907)	Illinois
American Coll. of Med. and Surg.....	(1905)	Illinois
University of Iowa.....	(1888)	Iowa
College of P. and S., Baltimore.....	(1885)	New Jersey
University of Michigan.....	(1895)	Wisconsin
Barnes Med. Coll.....	(1904)	Illinois
University Med. Coll., New York City.....	(1892)	New Jersey
Eclectic Med. Inst., Cincinnati.....	(1903)	Illinois
University of Pennsylvania.....	(1904)	Wisconsin

Marriages

LEON GOTTSCHALK, M.D., to Miss Mary Glenney, both of Chester, Pa., July 14.

JOHN D. BEAR, M.D., Elkton, Va., to Miss Lillian Orear, at Clearbrook, Va., July 15.

WILLIAM H. MOTT, M.D., to Miss Mela Reckmeyer, both of Farmington, Iowa, July 9.

CECIL M. JACK, M.D., Decatur, Ill., to Miss Charlotte Nelson of Bloomington, Ill., June 18.

MILFORD W. ROZZELL, M.D., Mayfield, Ky., to Mrs. Kerr-McCord of Womac, Ill., July 16.

JAMES T. BLACK, M.D., Elroy, Texas, to Miss Allie May Wideman of Austin, Texas, July 8.

ELMER BAKER, M.D., Humboldt, Iowa, to Miss Virginia Bell York of Cedar Rapids, Iowa, June 16.

ROBERT G. REYNOLDS, M.D., Palo Alto, Cal., to Miss Valley Perrine, at Vienna, Austria, July 17.

BENTON NOBLE COLVER, M.D., to Miss Agnes Grace Kellogg, both of Battle Creek, Mich., July 14.

SAMUEL JAMES CROWE, M.D., Baltimore, to Miss Susie Childs Barrow of Athens, Ga., June 29.

BERT ALFRED BOWERS, M.D., Granville, Iowa, to Miss Abrahana Vanden Burg of Alton, Iowa, July 22.

MELVILLE C. K. LITTLE, M.D., East Carroll, Ill., to Miss Lucille Harrer of Niles Center, Ill., June 27.

HERMANN CHARLES GRAMAN, M.D., Hammond, Ind., to Miss Eunice Kellogg Costello of Chicago, June 24.

CHARLES ABEL HOWLAND, M.D., Fall River Mass., to Miss Elsa Lindenkohl of Washington, D. C., July 8.

CHARLES S. GRAYSON, M.D., High Point, N. C., to Miss Bertha Crawford of McDowell County, June 25.

EDWARD SYLVESTER NORTON, M.D., Brooklyn, N. Y., to Miss Mary Winters Golden of West Long Branch, N. J., July 1.

Deaths

Nathan Monroe Dodson, M.D. Rock Island (Ill.) Medical College (now Keokuk, Iowa, Medical College), 1850; M.D. ad eundem, Rush Medical College, Chicago, 1896; a member of the State Medical Society of Wisconsin and its president from 1883 to 1884; for many years a member of the American Medical Association and of the Daniel Brainerd Medical Society; for nearly thirty years superintendent of the public schools of Berlin, Wis.; and actively interested in the educational affairs of the state; a practitioner of Berlin for nearly fifty-seven years; died at his home, July 19, from cerebral thrombosis, aged 81.

DeWitt Clinton Beebe, M.D. Albany (N. Y.) Medical College, 1863; a member of the State Medical Society of Wisconsin; one of the most prominent citizens and physicians of western Wisconsin; surgeon of the Fourth New York Volunteer Cavalry during the Civil War; mayor of Sparta in 1904 and 1905; and postmaster from 1906 to the time of his death; died at his home July 4, from myocarditis, complicated with acute nephritis, after an illness of one month, aged 70.

William Elmer, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1864; a member of the American Medical Association; once president of the Medical Society of New Jersey; a member of the American Academy of Medicine; president of the staff and medical director of Mercer Hospital, Trenton, N. J.; one of the leading practitioners of that city; died in Atlantic City, N. J., July 18, after an illness of ten months, aged 67.

Charles Edward Swan, M.D. Medical School of Maine, Medical Department of Bowdoin College, Brunswick, 1847; said to have been the oldest practitioner of Maine; a member of the board of overseers of Bowdoin College from 1870 to 1874, and a trustee of the college for a year thereafter; mayor of Calais in 1897 and 1898; a member of the American Academy of Medicine; and of the Council of Physicians and Surgeons of New Brunswick; died at his home in Calais, July 13, aged 86.

Washington Hodges Timmerman, M.D. Medical College of the State of South Carolina, Charleston, 1854; a Confederate veteran; member of the state legislature in 1882 and 1890; state senator in 1891 and 1892; a year later lieutenant-governor of the state; and from 1896 to 1900 state treasurer; prominent as a financier and a citizen; died at his home in Batesburg, July 14, from pneumonia, after a brief illness, aged 76.

Frank D. Kraft, M.D. Homeopathic Medical College, St. Louis, 1886 of Cleveland, Ohio; for twenty years editor of the *American Physician*; and for three years secretary of the American Institute of Homeopathy; professor of materia medica in the Cleveland Homeopathic Medical School; died at the home of his brother in St. Louis, July 19, from heart disease, after an illness of a few days, aged 57.

Allan Clarke Hutton, M.D. College of Physicians and Surgeons in the City of New York, 1872; an invalid from Pott's disease nearly all his life; for many years treasurer of the New Jersey Microscopic Society, and a resident of Brunswick, N. J.,; died at the home of his brother in Twilight Park, Haines Falls, N. Y., July 7, from myocarditis, after a prolonged illness, aged 66.

William Walter Fletcher, M.D. New York University Medical College, New York City, 1883; a member of the American Medical Association; and a specialist on diseases of the eye, ear, nose and throat; of Williamsport, Pa.; councilman and chairman of the common council for four years; died at his home in that city, July 12, from diabetes, after a prolonged illness, aged 53.

Simeon Belknap, M.D. Vermont Academy of Medicine, Castleton, 1860; United States pension examining surgeon at Niles, Mich.; a member of the Kalamazoo Academy of Medicine and American Association of Railway Surgeons; and local surgeon for the railways centering in Niles, died suddenly at his home July 14, from angina pectoris, aged 70.

Edward B. McGraw, M.D. Western Pennsylvania Medical College, Pittsburg, 1894; of Pittsburg; a member of the American Medical Association; surgeon to the Passavant Hospital, Pittsburg, and obstetrician to the Roselia Foundling Asylum and Maternity Hospital; was instantly killed in an automobile accident, in Pittsburg, July 21, aged 37.

William G. Winner, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1884; a member of the American Medical Association; surgeon to the Delaware Hospital, Throat, Nose and Ear Dispensary; and a well-known specialist of Wilmington, Del.; died at his home, July 10, from heart disease, aged 51.

Frederick Fliedner, M.D. University of Wooster, Medical Department, Cleveland, Ohio, 1872; coroner of Cuyahoga County, Ohio, from 1876 to 1878; and a member of the board of health of Cleveland from 1883 to 1886; died at his home in that city, July 12, from tuberculosis, after an illness of four months, aged 64.

George Ewing Stuart, M.D. Medico-Chirurgical College of Philadelphia, 1898; a specialist on diseases of the eye; of Harrisburg, Pa.; for several years a member of the staff of the Pittsburg Eye and Ear Hospital; died in Harrisburg, June 17, from cerebral hemorrhage, after an illness of fifteen hours, aged 52.

John Francis Hincks, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1906; afterward an interne in the State Hospital for the Insane, Jackson; of Manistee, Mich.; died in Long Beach, Cal., June 21, from tuberculosis of the lungs, after an illness of a year and a half, aged 25.

Calvin Carter, M.D. Medical College of Ohio, Medical Department University of Cincinnati, 1891; gold medalist of his class; a member of the American Medical Association, and secretary of the Franklin County (Ind.) Medical Association in 1906; died at his home in Brookville, from nephritis, aged 51.

Frank Catlin Greene, M.D. Jefferson Medical College, 1880; University of Heidelberg, Germany, 1883; a member of the American Medical Association; president and later treasurer of Truax, Greene and Company, Chicago; died at his home in Chicago, July 27, after an illness of one year, aged 51.

Benjamin Letcher, M.D. College of Physicians and Surgeons in the City of New York, 1856; at one time superintendent of the Western Kentucky Asylum for the Insane, Hopkinsville; died at his home in Henderson, Ky., July 13, from cerebral hemorrhage, after an illness of six months, aged 76.

Alpheus Baker Morrill, M.D. Hahnemann Medical College and Hospital, Philadelphia, 1894; of Concord, N. H.; died in the Margaret Pillsbury Hospital in that city, July 13, from the result of injuries received in altercation in a saloon in Hooksett, N. H., a fortnight before, aged 41.

Levi M. Hanna, M.D. Miami Medical College, Cincinnati, 1871; a member of the Indiana State Medical Association; a veteran of the Civil War; for more than twenty-five years a member of the U. S. pension examining board at Greencastle; died at his home in that city, July 16.

Bernhard Hesse, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1860; a member of the school board of Saginaw, Mich., for many years; one of the oldest practitioners of the city; died suddenly at his home, July 14, from heart disease, aged 73.

George W. Alexander, M.D. Louisville (Ky.) Medical College, 1881; a member of the American Medical Association; died recently at his home in Chula, Mo., from cerebral hemorrhage, after an illness of six hours, aged 52, and was buried at Chillicothe, Mo., June 23.

John William Thatcher, M.D. Kentucky School of Medicine, Louisville, 1869; of Marion, Ohio; for several years editor of the Marion Mirror; died in the Central Emergency Hospital in Marion, July 16, from paralysis, after an invalidism of seven years, aged 78.

James M. O'Neill, M.D. College of Physicians and Surgeons, Dublin, Ireland, 1874; of Buffalo, N. Y.; a member of the American Medical Association; died at his home, July 15, from disease of the stomach, five days after a surgical operation, aged 56.

Daniel Newcomb, M.D. Berkshire Medical College, Pittsfield, Mass., 1852; Chicago Medical College, 1870; first "Free State" registrar of deeds of Atchinson County, Kan., in 1858 and 1859; died at his home near Ocean Springs, Miss., July 12, aged 79.

John D. Mulhane, M.D. College of Physicians and Surgeons, Baltimore, 1883; for many years local surgeon of the Pennsylvania System, at Steubenville, Ohio; died in the State Hospital, Athens, Ohio, July 15, from pulmonary tuberculosis, aged 50.

William F. Wiard, M.D. Chicago Medical College, 1873; sometime president of the Sacramento (Cal.) Society for Medical Improvement, died at his home in that city, July 9, from paralysis, after a prolonged period of invalidism, aged 65.

Anthony R. Boykin, M.D. New York University Medical College, New York City, 1860; a Confederate veteran; formerly a practitioner of Smithfield, Va.; died in the Confederate Soldiers' Home, Richmond, Va., July 14, aged 69.

Philip Aylett Fitzhugh, M.D. Medical Department of Hampden Sidney College, Richmond, Va., 1849; died at the home of his daughter near Machipongo, Va., July 7, from dysentery, after an illness of two weeks, aged 84.

L. F. Hyder (Lieense Tennessee, 1889), chairman of the Carter County Court; and at one time a member of the state legislature; died at his home in Elizabethton, Tenn., July 8, from nephritis, after a long illness.

George W. Drury, M.D. Missouri Medical College, St. Louis, 1882; for twenty-five years a practitioner of Decatur, Ill.; died at his home in that city, July 10, from nephritis, after an illness of two years, aged 54.

Wesley Robbins, M.D. Indiana Eclectic College, Indianapolis, 1884; a colored practitioner of Detroit; died at his home in that city, July 13, from cerebral hemorrhage, after an illness of two weeks, aged 52.

Rody Elton Warner, M.D. Eclectic Medical Institute, Cincinnati, 1875; Western Pennsylvania Medical College, Pittsburg, 1887; died at his home in Pittsburg, July 15, after an illness of several months, aged 57.

Bryant James Smith, M.D. University of Georgia Medical Department, Augusta, 1889; fell into a well at his home, Sunnyside, near Waycross, Ga., June 24, and broke his neck, dying instantly, aged 45.

Elijah A. Lyon, M.D. Hahnemann Medical College and Hospital of Chicago, 1880; College of Physicians and Surgeons, Chicago, 1898; of Chicago; died in Ottawa, Ill., July 14, after a short illness, aged 53.

Myles J. Gahan, M.D. Texas Medical College and Hospital, Galveston, 1867; formerly of Grand Island, Neb., but for five years a resident of Omaha; died in the Omaha General Hospital, July 18, aged 65.

Alfred David Becket (Years of Practice, Ohio, 1896), of Limaville, Ohio; died at the Alliance Hospital, June 28, from septicemia, following the bite of a rat, after an illness of two weeks, aged 53.

Alvin G. Fritsche, M.D. Rush Medical College, Chicago, 1901; of Black Hawk, Wis.; died at the Augustana Hospital, Chicago, July 13, five weeks after an operation for appendicitis, aged 30.

Bela St. John, M.D. Eclectic Medical College of the City of New York, 1882; died at his home in Torrington, Conn., July 16, from cerebral hemorrhage, after an illness of one year, aged 80.

John B. Hughes (Examination, Maine, 1895), an eclectic practitioner of Portland, Maine; died suddenly July 12, at his summer home on Peak's Island, Maine.

Joseph B. Randleson, M.D. St. Louis Medical College, 1878; died at his home in East Galesburg, Ill., from paresis, after an illness of six years, July 18, aged 73.

John Hamilton, M.D. Detroit (Mich.) College of Medicine, 1876; died at his home in Pompeii, Mich., July 14, after an illness of ten days, aged 77.

George A. Cook (License, Rhode Island, 1895), died at his home in South Providence, R. I., July 8, after a brief illness, aged 79.

Frederick Habermehl (Years of Practice, Ohio, 1896), died at his home in Clarington, Ohio, July 8, after a prolonged illness, from paralysis, aged 73.

John S. Thomason, M.D. Atlanta (Ga.) Medical College, 1870; of Pacolet, S. C.; died in the Columbia (S. C.) Hospital, July 6, aged 58.

Grosvenor B. Cady, M.D. Physio-Medical College, Cincinnati, 1864; of Chicago; died in the Home for Incurables in that city, July 18.

Truman Nichols, M.D. New York Medical College, New York City, 1852; died at his home in Brooklyn, July 13, aged 81.

Samuel F. Teed, M.D. Physio-Medical Institute, Cincinnati, 1859; died at his home in New York City, July 6.

Society Proceedings

COMING MEETINGS.

American Public Health Association, Winnipeg, Can., Aug. 25-28.
American Acad. of Ophthal. and Oto-Laryng., Cleveland, Aug. 27-29.
Wyoming State Medical Society, Sheridan, Aug. 28.
New Mexico Medical Society, Albuquerque, Sept. 2-3.
Washington State Medical Association, Walla Walla, Sept. 2-4.
Medical Society of the Missouri Valley, Council Bluffs, Sept. 3-4.
Colorado State Medical Society, Denver, Sept. 8-10.
Med. Soc. of the State of Pennsylvania, Cambridge Spgs., Sept. 14-17.

AMERICAN ACADEMY OF MEDICINE.

Thirty-third Annual Meeting, held at Chicago, May 30 and June 1, 1908.

(*Continued from page 340.*)

The Place of Woman in the Modern Business World as Affecting Home Life and Marriage.

DR. ANDREW STEWART LOBINGIER, Los Angeles, believed that discussion of this subject must be governed by the facts obtaining to-day and not by preconceived notions of personal preference in an ideal state of society. He admitted that there were vital reasons why women were now impelled to earn a living outside the home; but how far the public employment to women interfered with their marrying, or if married, with the fulfillment of their obligations as wives and mothers, there were no reliable data to prove. There were certain definite views held by some women who choose employment outside the home, among which were mentioned a deep aversion to the sacrifices entailed by early married life and maternity. Another class disliked the pinching economy so often necessary. Still others had determined that the life of a bachelor maid was less hazardous than life with a husband, children, and four-room flat on a seventy-five dollar salary. To a still greater class a desirable offer of marriage never comes. He was convinced that the solution of the problem would come from the women with their subtility and keen perceptions, and that in another quarter of a century women would be adjusting themselves to the changed conditions with the result of a nobler, more secure and broader home life.

Place of Women in the Modern Business World as Affecting the Health of the Race.

DR. L. DUNCAN BULKLEY, New York, said that with the incessant desire for excitement, pleasure and dress, thousands worked, often to the detriment of health, for the means of gratifying tastes and desires not laudable. While many women were obliged to care for themselves, the desire to be independent urged others into business, when a little more exhibition of the qualities special to the gentler sex would tend to make home life sweeter and more attractive, and the saloons relatively less alluring to men. He advocated earlier bed hours, and rest during menstruation, the last of which was impracticable under the imperative call of duty and work equally at all times in the business world. It was not so much the load but the pace that killed. The greatest field of philanthropy in this connection lay in education regarding true hygiene and proper mode of life.

Woman in the Business World, as Affecting Health and Morals.

DR. NORMAN BRIDGE, Los Angeles, contributed this paper (read by Dr. McBride, of California) in which he called attention to the change in social and economic equations the result of the entrance of women into business pursuits. While it was easy to urge that every woman should marry and make a home Dr. Bridge asserted first, that this was manifestly impossible, and secondly, it was the woman's own affair. While the single business woman always, and the pampered rich woman often, failed to perpetuate the race, the business woman was much the less to be blamed. He did not believe that a business woman's experience unfitted her for a domestic life, but rather that it enhanced her power and efficiency as a useful social unit. The health of the woman in his opinion was not generally impaired by a business life, unless she worked for very low wages and under depressing conditions. He denied that a business occupation led to boldness, which was a temperamental quality, or that it impaired either charm and innocency, unless by these words was meant ignorance and uselessness, which was often the real meaning carried by them. Neither did he believe that a business life tended generally to immorality. A few, mainly in consequence of starvation wages, might go wrong; and many girls in grinding clerkships would act wisely in entering domestic service, thereby having easy and reputable lives and being able to save money. He criticized the prevalent fad, that "business" life, even at starvation wages, was better than a "work" life, with less physical and mental fatigue, and more comforts and money.

Female Labor as a Factor in Social Life.

DR. A. L. BENEDICT, Buffalo, believed that many men and women were unfitted for marriage, that each individual should have perfect freedom of choice, and that only considerations of propriety should be a limitation to women in selecting occupations. The economic success of marriage as a vocation for women would be enlarged if, without in any way departing from the sentimental and ethical factors involved, it were generally recognized as a business, to be carefully learned and to be carried on with punctuality, intelligence and devotion. While the competition by women in business lines involved less than one man in ten, yet it lowered the standard of wages for the male. On the other hand, wages generally were at a point incommensurate with the wealth of the country. Far more important than the ordinary conception of the social influence of female labor, especially in the higher grades, was the diversion of female labor from domestic to commercial channels. Domestic servants now cost about double what they did twenty years ago, so that the ideal home of the average professional and small business man could no longer exist under ordinary conditions, thus driving thousands of families into boarding houses, etc. Dr. Benedict concluded that the thousand female lawyers and seven thousand women physicians in the United States were only a drop in the bucket and that it was the lack of domestic servants and of domestic training that was disrupting the national home life and thereby causing a "woman's problem."

Modern Methods of Education and Their Effects on the Health of the Race.

DR. GEORGE HOWARD HOXIE, Kansas City, Mo., asserted that the effect of the educational methods on the home life and welfare of the American people had been that of stimulating to an abnormal degree the intellectual and nervous natures of women. He did not necessarily advocate the reducing of the intellectual training but its support by adequate physical and moral development. One-sided development, he observed, affected girls rather than boys because the stern demands of life compelled young men of the working classes to leave school earlier than the young women. A superintendent of a large city system had said: "My observation enables me to state positively that not one pupil in ten is injured by over study, compared with those who are up late hours receiving company, attending parties, and going to theaters, when they should be in bed. It is not school work that hurts, but it is social dissipation that undermines the health of boys and girls. When a child is going to school, his business is to be at school, to take necessary exercise, eat plain wholesome food, and sleep from eight to ten hours out of every twenty-four, and to be a child as long as possible without trying to ape society men and women."

Another viewpoint was the influence of educational methods on the woman teacher. Unless the woman was endowed by nature with a body stronger than the average of her sex and unless her education had been more symmetrical than the average, she could stand only a few years of school teaching without breaking down. Another point for consideration was the effect of nervous teachers on the health of the pupils. In Germany more men and fewer women were desired as teachers, to reduce to a minimum this tendency to hysteria.

Others had stated that the primary grades should be supplied with quiet and womanly women as teachers, while the upper grades should have the more virile and balanced influence of men as teachers. Further since teachers did not have a living wage they could not have the vacations and recreations necessary for the complete restoration of nervous energy used up by their school room activities. Then, there were not teachers enough to meet the needs of a more healthful method of education. There should be schools good enough for the best and wealthiest and still adapted to and utilized by the worst and poorest, if there was to be a preservation from classes, castes, and aristocracy with its concomitant degradation and pauperism.

DISCUSSION.

DR. HELEN C. PUTNAM, Providence, believed that all human beings had the right to develop their best abilities in all directions for the service of society. The development of women to a higher plane of education and morals than men would not solve sociologic problems. There must be exactly the same training of men in order that women might select good fathers for their children. She called attention to the work of the National Society for the Prevention of Social Disease which had been aided by the influence of women added to the stronger influence of men. She believed that women should have a voice in the selection of the right men to hold office and of proper teachers for children in the schools. She suggested the creation in the public schools of a department of hygiene in which in addition to looking after the hygiene of the school children, there should be taught homemaking and the elements of biology.

DR. EMMA B. CULBERTSON, Boston, believed that the question of the influence of women on the future of the race was to be solved only by the impartial cooperation of both sexes, and that every man, woman, boy, or girl, was entitled to the best development of their individual capabilities. Admitting the presence of a certain amount of race degeneracy in America, she felt that this was not most marked among the women, but that there would be plenty of boys and girls of the best type if they were given the right kind of fathers. A great deal of the overwork of women teachers was absolutely unnecessary and was imposed on them by the men who are head masters. She believed there should be more careful selection of work for the normal school and that school matters should be kept out of politics.

DR. JOHN H. TRESSEL, Alliance, Ohio, said that the present mode of sanitation and physical culture, according to his observation, had developed the girls to a greater extent than the boys. This he attributed to a greater tendency to dissipation on the part of the boys, who should receive more attention to prevent this deterioration.

DR. DONLEY C. HAWLEY, Burlington, Vt., said that the trend of thought and effort should be to fit woman for the function of wife and mother and induce her to choose the fulfillment of that function; though there were times when it was necessary for her to compete with men in many walks of life. He believed that both the school system and business vocation should be so regulated that every girl might lose two, three or four days in the course of the month without any detriment to herself so far as her class standing or her standing with her employer was concerned.

DR. FLORUS F. LAWRENCE, Columbus, Ohio, believed the principal factor in the invasion of men's careers by women to be that business men found that women rendered more faithful service at a less price. Girls should be taught that a home was something that a woman ought to desire and live for, and without which she could not live happily. Without this ideal the woman could not be expected to want to make a home.

DR. WARD, California, speaking from the standpoint of a teacher, did not hesitate to say that in law and medicine women generally could be relied on to stand absolutely for the highest standards in professional work, without variation or compromise, while the persons who could be counted on to aid some indirect, underhand and political movement to debase the profession or to get some personal advantage at the expense of the community were the men. While there were men in the professions working for the loftiest ends, this could not be said of all. He believed that college women would be the leaders in women's work in the next generation as college men have been, and were to-day, the leaders among work of men.

AMERICAN ORTHOPEDIC ASSOCIATION.

Twenty-second Annual Meeting, held in Chicago, June 4-6, 1908.

(*Continued from page 344.*)

Fibrous Ankylosis of the Knee.

MR. E. MUIRHEAD LITTLE, England, said that in the majority of cases of stiff knee the ankylosis is fibrous. He considered the causes and the symptoms of the condition. The treatment differs in its objects in the upper and lower limbs. In the former, free mobility is the greatest consideration, while in the latter, a firm support to the weight of the body is the thing wanted. The worst cases of fibrous ankylosis must be treated the same as bony ankylosis. Excision of the joint should not be done before the age of fourteen, and even then, the epiphyseal lines should be respected. Mr. Little has not found pins, nails, screws, or wires necessary in the knee. He quoted some illustrative cases.

When Is Bony Union Complete After Excision of the Knee?

DR. J. T. RUGH, Philadelphia, after a review of the literature and an exhaustive consideration of all the facts, reached the following conclusions: 1. Writers and operators differ as to the length of time fixation or retention apparatus should be worn after excision. 2. Flexion deformity is much more likely to occur before twelve years of age, when union is fibrous or cartilaginous. 3. Bony union is more probable after this period, by reason of the increased activity on the part of osteogenic tissues in the part. 4. Deposit of bone normally takes place more slowly in the epiphysis, because of the histologic structure of the parts. 5. Intrinsic influences may and do retard the process of healing after excision. 6. Extrinsic factors also delay the ultimate bony union. 7. As bony union after fracture of the shaft of a long bone is not complete for from nine months to a year, it will require nearly as much more time for completion in the epiphysis; because of structure and of intrinsic and extrinsic factors. 8. During operation sufficient periosteum should be preserved to entirely cover over the line of contact of the excised parts, and accurate coaptation and as nearly absolute fixation of the bone ends as possible should be secured. 9. Fixation should be maintained for a period of at least a year, and probably nearly two years, after excision, to avoid the danger of flexion or other deformity.

Discussion on Knee Lesions.

DR. WALTER G. STERN, Cleveland, asked what had been the experience of the two readers of papers in resection for flail knee joint after infantile paralysis and for a bad position after rheumatoid arthritis. He has had humiliating experiences in both classes of cases.

DR. YOUNG said that when his attention was first attracted to osteotomy above the knee for ankylosis above the knee with deformity, he did not think a great deal of it, but after having performed it on children from 12 to 14 years of age with satisfactory results, he is in favor of the Ollier operation. He believes that in future the opening of the knee joint will be a frequent procedure.

DR. ROBERT B. OSGOOD said that he had excised the knee in a case of what was supposed to be rheumatoid arthritis, and in which the microscopic examination had seemed to make this diagnosis certain. The patient has now a stiff, solid knee.

MR. LITTLE said that when the case is fairly put to them, patients do not like the idea of an operation that will cause a stiff knee. He has found that in infantile paralysis the bones unite well, although he had one bad experience after an arthrodesis of the ankle, and a subsequent arthrodesis of the knee. The extra strain on the popliteal muscles produced a gangrene of the front of the foot. He does not consider

Ollier's an ideal operation, because, instead of correcting a deformity, another deformity is added to that already existing.

DR. RUGH said that he has excised the knee for infantile paralysis in a woman of 48 years. He has had no experience with excision after arthritis deformans. He believes in promising the patient bony union after a period of about two years, although fibrous union may occur in from four to six weeks.

Preliminary Report of New Operation for Arthritis Deformans of the Hip.

DR. FRED H. ALBEE described this operation, and said that firm ankylosis was produced with the leg in a corrected position. He reported five successful cases. All the patients had been incapacitated for work for some months or years. One does not require any elevation, while others are wearing up to half an inch on the heel of the affected leg. In every case the pain has been entirely relieved.

DISCUSSION.

DR. ARNOLD said that he had seen one of the patients previously and operated. In the *x*-ray taken at the time, he could not distinguish any osteophytes. The operation was at first successful, but later, walking upstairs made man tip forward. He then drifted away from Dr. Arnold.

DR. YOUNG said that after excision the joint is not so stable as after Dr. Albee's operation, although the motion is good.

DR. TURNER thinks that it would be of great value to the association if Dr. Albee would report on the condition of these patients at the next annual meeting.

DR. PAINTER said that the Murphy operation does not give enough motion to be of much value, excision is fruitless, and osteotomy unsatisfactory when much deformity was present.

The Question of Balance and a New Form of Shoemakers' Last.

DR. ANSEL G. COOK, Hartford, Conn., first reported an elementary study of the balance of the human body and its relation to the balance of shoes, including rules for designing or for judging of the efficiency of shoes. His second paper dealt with extension of the usefulness of plaster-of-Paris in enabling the orthopedic surgeon in a measure to escape from the thraldom of the shoemaker.

DISCUSSION.

DR. J. RIDLON, Chicago, said that instead of using a board to step the foot on when making the cast, he uses a piece of sheet steel, bent according to the height of the heel needed for each particular foot.

DR. RIELY said that he uses aluminum for the same purpose. He has found that the use of a bandage around the plate and the foot has tended to flatten the arch and spread the heel.

The Operative Treatment of Bony Ankylosis of the Knee, Hip, and Elbow Joints.

DR. J. B. MURPHY, Chicago, described his well-known method of preventing bony union after operations for ankylosis and described a process of injection by which he renders joints immune to infection. The solution injected consists of formalin and glycerin. In every case prepared in this way there was an entire absence of inflammatory reaction.

DISCUSSION.

DR. YOUNG asked why Dr. Murphy removes the lateral ligaments entirely. He thinks that if they could be saved, it would be an advance in the treatment of the condition.

DR. DE FORREST WILLARD, Philadelphia, also thinks that if both these ligaments were removed the joint would not be strong enough to support the body satisfactorily.

DR. J. RIDLON, Chicago, asked whether or not Dr. Murphy's results are usually good in cases of gonorrheal inflammation of the joint.

DR. DAVIS said that the crucial test of the operation is in the knee joint, and he desired to see a perfectly good result in this joint. He operated on a patient according to Dr. Murphy's procedure; but instead of transverse division of the patella he used lateral incisions, turning in lateral flaps. He got too much motion; so he excised less in the next case, getting a better result. In his next cases he excised still less, and did not get enough motion. He said that he could not succeed in striking the happy medium. He does not see the necessity for removing the lateral ligaments.

DR. V. P. GIBNEY, New York, asked about the use of formalin in complete ankylosis of the joints with bony union. He thinks Dr Murphy right in taking out all that can be taken and covering the bone completely with the flaps.

DR. MURPHY said that he is convinced that he can produce a practically perfect, freely movable joint, because he has done so. He does not care to leave the lateral ligaments, and he feels that what he did leave was enough to insure good motion. In cases of gonorrheal infection, he does not follow out a different procedure from that employed in other cases of bony ankylosis. It is only necessary to avoid getting the joint infected.

(*To be continued.*)

MASSACHUSETTS MEDICAL SOCIETY.

One Hundred and Twenty-seventh Annual Meeting, held in Boston, June 9-10, 1908.

The President, DR. GEORGE W. GAY, Newton, in the Chair.

Visits to Hospitals.

The morning of the first day was devoted to visits to the Boston hospitals and clinical laboratories.

Value of Health Inspection.

DR. LYMAN A. JONES, North Adams, declared that local health boards throughout the state are, almost without exception, inconsistent and inefficient, maintained that not more than half the men composing health boards were physicians, but were men with political influence who sought rather private interests than the public good, and recommended that more power be given to the state sanitary committee.

Treatment of Fractures as Affected by the X-Ray.

DR. FREDERICK J. COTTON, Boston, stated that the greatest value of the *x*-ray was in the open treatment of fractures, particularly old cases due to imperfect original results, with deformity and disability. He called attention to the fact that the younger generation of physicians was liable to depend too much on the ray, and that consequently the results in large hospitals in routine cases are not so good as they were ten years ago. Roughly speaking, by the use of the *x*-ray, fractures had resolved themselves into as common types as luxations. Fracture of the elbow was less common now than formerly, while fractures of the head of the radius and scaphoid had become common. The *x*-ray had not only taught us what to look for, but how to look. The idea that it was not safe to set a fracture without a skiagraph, Dr. Cotton said, was nonsense, and was often impracticable. In certain fractures of the foot, of the hip within the capsule, and of crushed fractures of the hand, a skiagraph was necessary. In dislocations with fractures, Cotton advised reduction of the dislocation and then the application of the ray. A man who was unable to set a fracture without the *x*-ray probably could not set it at all. He commended the open treatment of certain kinds of fractures.

DISCUSSION.

DR. FRED B. LUND, Boston, spoke favorably of the open method of reduction, and mentioned a case of ununited fracture of the femur treated by this method, with excellent results. He said that these cases should only be treated by the experienced surgeon.

DR. HOMER GAGE, Worcester, considered that treatment of fractures at present was not so satisfactory as formerly, and agreed that too great dependence was placed on the *x*-ray and too little on manipulation.

Fracture of the Lower Epiphysis of the Tibia.

DR. FREDERICK S. COOLIDGE, Pittsfield, reported the case of a patient 41 years old, who was 6 years old at the time of the fracture. The result was perfect for a year, then a lump developed in the region of the external malleolus. A brace

was worn for four years, but the leg continued to shorten proportionately until the patient was 16, the total shortening being 1½ inches. The fibula continued to grow normally. *X*-ray examination showed that the tibia had not grown since the accident, and that the lump was the lower end of the growing fibula.

DISCUSSION.

DR. CHARLES L. SCUDDER, Boston, said that cases of injury to the lower epiphysis of the tibia were few, but that the *x*-ray was disclosing more. The importance of the accident was due to the deformity and shortening; the contiguity of the joint and the fact that the line of weight-bearing was affected. The causes were displacement of the epiphysis or crushing or injury to the part. In the Massachusetts General Hospital fifteen cases were found by means of skiagraphs. In fourteen of these the ages of the patients ranged from 9 to 17 years. Dr. Scudder said that cessation of growth was generally believed to be due to disturbance of circulation. Shortening was greatest when the accident occurred at about 6 or 7 years of age than at 16, the former age being the period of more active growth. He emphasized the importance of accuracy of diagnosis.

Stiff and Painful Shoulders; Subdeltoid or Subacromial Bursitis.

DR. ERNEST A. CODMAN, Boston, said that outside of definite fractures at the shoulder, 90 per cent. of the disabilities come under the title of the paper. Cases were divided into three classes: The acute type, with inflammation and tenderness; the adhesive type, with adhesion of the surfaces of the bursa, and the chronic type, presenting some interference with motion of bursa and difficulty in elevating the arm. They might be infectious, tuberculous, gonorrheic or idiopathic, following influenza or injury. The so-called "glass arm" of the baseball pitcher was an example. The bursa was about the size of the palm of the hand. Subacromial is the better name, as it is nearer that situation. Differential diagnosis must be made from muscular rheumatism and neuritis. The pain in this bursitis was either at the insertion of the deltoid or at the point of the shoulder. Prognosis was good, as almost all patients recover. Treatment might be necessary for from two to six months, and might be either exercise, massage and Zanden apparatus, or by breaking adhesions under anesthesia. The elevated arm splint was useful, but was hard on the surgeon and looked uncomfortable to patient's friends. The best treatment was to open bursa and break up the adhesions. This usually resulted favorably in from four to six weeks. This disease was the periarticular arthritis of twenty-five years ago.

DISCUSSION.

DR. DOUGLAS GRAHAM, Boston, treated these cases with massage for one-half hour every other day, which in the acute cases was better than longer and more frequent sittings. He required patients to lift weights and to suspend themselves by the hands. His use of strong faradic current at the point of pain for short periods had relieved that symptom in some of his cases.

Radium Bromid, Rather than Operation or X-Rays in Early Treatment of Superficial Cancers.

DR. FRANCIS H. WILLIAMS, Boston, asserted that Dr. Rollins of Boston was the first to suggest that emanations from radium might have therapeutic value. Dr. Williams used from 0.050 to 0.100 of pure radium bromid in a capsule covered by rubber tissue. He described his technic, which consisted of permitting the capsule to rest against the diseased area for from half a minute to three minutes from one to three times a week. He used a fresh rubber capsule at each application. The treatments were harmless. Dr. Williams had used the method in both hospital and private work. It was more valuable on small surfaces, but would not entirely exclude other methods of treatment. Improvement was noticed in two or three weeks. Among the conditions benefited he enumerated lupus erythematosus, lupus vulgaris, keloid, chronic ulcer, epithelioma, rodent ulcer, acne, adenoids and inflammation of small glands. He reported one case of Paget's disease not helped by this form of treatment and some cases of epithelioma and rodent ulcer. He advised caution in the use of this treatment in old and feeble persons.

DISCUSSION.

DR. HERBERT L. BURRELL, Boston, said that he had come prepared to offer a protest as a surgeon to the dictum of nonsurgical intervention, but was now a convert, though he believed that radium could replace the knife in certain selected cases only.

DR. GEORGE W. GAY, Boston, spoke of a case of his treated by Dr. Williams. The lesion was a small epithelioma of the nose. A three-minute sitting once a week for five weeks entirely removed the growth and left the skin clear. There was no pain and only slight itching.

DR. ERNEST CODMAN, Boston, cautioned against too great enthusiasm in the use of this agent, and reminded the society that the same apparently excellent results were announced at the initial use of the *x*-ray. He felt on the whole that the use of the *x*-ray had done more harm than good, though it was undoubtedly of value in cases of skin cancer. He had seen two cases of epithelioma of tongue, in both of which valuable time had been lost by the use of the *x*-ray, and one patient was beyond all hope of aid from operative intervention. Growths such as mentioned by Dr. Williams were probably helped by radium, but in growths below the skin Dr. Codman considered the method unsafe.

DR. WILLIAMS said that reason must dictate the treatment. His experience was based on treatment for four and a half years with radium.

X-Ray Plates of Fractures from the Massachusetts General Hospital.

DR. CHANNING C. SIMMONS, Boston, introduced the exhibit and spoke of the necessity of employing two views in all fractures, an anteroposterior and a lateral view. Attention was called to the following unusual cases: Fracture of the head of the radius, fracture of the scaphoid bone of the wrist, and dislocation of the semilunar bone of the wrist.

Use of Fresh Animal Sera in Hemorrhagic Conditions.

DR. TIMOTHY LEARY, Boston, cited cases of the successful clinical use of animal sera, and showed that aside from the constitutional hemic effect, they acted as direct cardiac stimulants. Cases were yet too few to draw conclusions as to the value of sera.

DISCUSSION.

DR. SAMUEL W. GODDARD, Brockton, mentioned eight cases occurring during the last four months in which sera had been used at Carney Hospital in patients with various degrees of jaundice, and there had been no hemorrhage following operation in such cases since. All patients with jaundice received it at above hospital previous to operation.

DR. ERNEST W. CUSHING, Boston, reported one case of extrauterine pregnancy with severe hemorrhage, in which administration of serum was apparently followed by great benefit.

Some Aspects of Gonorrhea.

DR. FREDERICK FORCHHEIMER, Cincinnati, in the Shattuck lecture, dealt mostly with statistics of the prevalence of this disease. The Prussian army was least affected, with a rate of 1.23 per cent.; the United States Army was most seriously affected, its ratio being 8.95 per cent.; the British army stood next to the United States, with a ratio of 5.94 per cent.; the United States Navy's ratio was 3.88 per cent. In civil life its frequency was least among laborers, next among the highest class, and highest among the middle classes. In the armies of Europe it was gradually diminishing, as shown by figures from 1879 to 1903. In the United States Army, in ten years from 1897 to 1906, there were 70,000 cases. Figures showed that the effect of a canteen or no canteen were not responsible for an increase found in the United States Army of late years. He felt that the European figures of its prevalence in civil life were overestimated, the ratio being given from 48 to 80 per cent. of all men. In one service of the Massachusetts General Hospital but 20 per cent. of the his-

tories showed its presence. He agreed with Erb that the morbidity of the disease was diminishing. The United States Army and Navy were exceptions to this rule. About one-half of all adult males contract gonorrhea. The cause of "one child matrimony" he believed to be prevention of conception rather than gonorrhea. Much could be done to stamp out the disease. Many lurid statements as to its grave dangers were overdrawn and due to overenthusiasm of gynecologic and other specialists. The laity could aid in its extinction, and the physician could disseminate valuable information.

Growth and Development of Major Surgery in the Smaller Cities.

DR. CHARLES H. RICHARDSON, Pittsfield, said that during the last ten years major surgery had been done outside of the large cities with much success. The advent of the modern hospital in these smaller cities had induced men to operate, and the results equaled those anywhere. He advised no man to attempt such work without due preparation. He would approve of a law which prohibited operating by all who have not had from three to five years of postgraduate training. The private hospitals had come to stay, but he believed it was the men who made the hospitals and not the hospitals which made the men. St. Mary's Hospital, Rochester, Minn., was an example. He advised that the surgical staff of hospitals be given opportunity to advance, and spoke a word for unanimity of action by hospital staffs in the interest of the hospitals and deplored the existence of jealousies.

DISCUSSION.

DR. HALBERT G. STETSON, Greenfield, urged that a greater freedom be allowed the surgeon by the general practitioner and a further attempt be made to educate the latter to the value of early operative intervention. In this particular only is the surgeon handicapped in the smaller towns and this is the principal reason for the less favorable results there.

Necessity for Immediate Treatment in Serious Ocular Conditions Frequently First Seen by the General Practitioner.

DR. FREDERICK CHENEY, Boston, spoke of acute glaucoma and ophthalmia neonatorum only. Severe cases of glaucoma were not usually overlooked by the practitioner and the use of a strong myotic until the effect was produced was advised until the oculist was called, when, as a rule, operation was the treatment. The question of ophthalmia neonatorum was a very important one. New cases usually ended in recovery if seen early and treated properly. In Massachusetts the results were better than in other states, due to the lesser prevalence of the midwife. Last year 171 cases were treated at Massachusetts Charitable Eye and Ear Infirmary. The importance of early treatment was great. He recommended the instillation of 4 or 5 drops of 25 per cent. argyrol, every four hours, and states that the newer silver salts were less irritating than silver nitrate. Often a 3 per cent. boracic acid solution used every twenty minutes prevented an attack by simple cleanliness. A simple ointment on the lids prevented adhesion and soothed the irritation due to frequent irrigation. The usual etiologic factor was the gonococcus. One value of hospital treatment was the isolation of the patient from other members of the family.

DISCUSSION.

DR. DAVID HARROWER, JR., Worcester, mentioned the value of asepsis in fresh perforating wounds of the eye. One large firm has provided a special room where, after such an accident, an attendant washed out the eye with a solution, applied a sterile pad, and then sent the patient to an oculist. This prevented many complications. He mentioned as an effective emergency treatment for a burn of the eye the application of an oily solution to the affected part and the use of a sterile covering bandage.

The Country Doctor's Relations with the Metropolitan Institutions and Specialists.

DR. GILMAN OSGOOD, Rockland, mentioned the unpleasant features which may arise through the untactful words of hospital internes in the presence of referred patients, and also suggested that medical men in large centers should distinguish between patients referred for diagnosis and those sent for treatment. One source of misunderstanding might arise in operative cases in which the home physician felt competent to operate, but, wishing the consultant's opinion as to the advisability of such procedure, sent the patient for that information, but thereby lost control of patient. The country doctor wished skillful aid and courteous treatment from his city brethren.

DISCUSSION.

DR. MAURICE H. RICHARDSON, Boston, said that he realized the opportunities for misunderstanding under the circumstances described. The three graces, Faith, Hope and Charity, are of much interest in this matter, but the practice of the latter led to most pleasant results. The consulting physician has his own matters to disturb. He felt that in operation the surgeon was responsible for all things, from an accident to the anesthetic, or a burn to the patient by the nurse, to the occurrence of a hernia in the scar. Caution was advised on part of family physician in accepting information sifted through the mind and word of patient returning home after a visit to the metropolitan physician. He felt that no patient was worth the loss of self-respect, as was often said by Dr. John Homans. The consultant was in a hard position when he discovered a real cause for censure in the home physician's care of a case, yet the tactful man might even overcome that condition. He considered institutional work more difficult and trying than private work, and advised charitable criticisms of all apparent lapses in etiquette.

DR. THOMAS F. HARRINGTON, Boston, in the annual discourse on "The Sanctity of Medicine," reviewed the early history of medicine coming through the Greeks and Hebrews, and now reaching us as the era of scientific medicine. The faith of the laity was with us, as always. He advised the return of the family physician of the old school with the advances of scientific medicine added. Physicians should lead in questions of physical health and morals. Quackery and charlatanism should not continue to be mixed with the ideas of the people on medical propositions.

Council on Medical Education.

DR. HAROLD C. ERNEST, Boston, chairman of the Committee on Medical Education, reported the result of the conference of the Council on Medical Education of the American Medical Association in Chicago this spring. He reported the particulars in which Massachusetts was below the standard on matters of medical education and registration, namely, lack of required preliminary education, the undesirable condition which exists that does not require graduation from a reputable medical college as a prerequisite for registration; and the fact that Massachusetts has no reciprocity with the other states. He reported that of the 398 applicants in Massachusetts during last year, 40 per cent. were rejected; also, that of 66 candidates who applied for registration and who had no degree, 89 per cent. were rejected. In relation to the matter of employing a portion of the time of examination in practical tests, he reported that the board of registration would make a beginning along this line in the examination of July, 1908.

State and Medical Legislation.

DR. GEORGE G. SEARS, Boston, chairman of the Committee on State and National Legislation, reported that the committee had worked in unison with the Council on Medical Legislation of the American Medical Association. In state affairs it has opposed the bill for the registration of osteopaths, which bill has been defeated; also the bill to license so-called optometrists, which the presenter was given permission to withdraw; also a bill to prohibit compulsory vaccination, which amended present law so that it was not obligatory to vaccinate a child before the age of 2 years. It favored the bill to regulate expert testimony, which was under discussion; and also the bill to establish an observation hospital for insane persons in Boston, which bill has passed.

Grant for Tuberculosis Committee.

The associated committee on tuberculosis asked for an appropriation of $500, which was granted.

Contract and Lodge Practice.

The petition of the Essex North District Medical Society that the council consider the matter of contract and lodge practice and report means for its abolition, was granted, and Drs. William A. Dolan of Fall River, J. Arthur Gage of Lowell and Charles E. Durant of Haverhill were appointed a committee to consider the matter.

Ophthalmia Neonatorum.

It was voted that in view of the work that the American Medical Association was doing in the matter of ophthalmia neonatorum, and the gravity of the disease, that a committee of five be appointed to consider the treatment of the disease and measures looking to its prevention. The committee was appointed as follows: Drs. Oliver F. Wadsworth, Boston; Francis P. Emerson, Boston; Frederick E. Cheney, Boston; David Harrower, Jr., Worcester, and John W. Bartol, Boston.

Treasurer's Report.

The treasurer reported a balance of $13,390.16 in treasury; that 135 new members had been admitted during the year, and that 50 had died.

Defense of Malpractice Suits.

An act for the defense of suits for malpractice against members of the society was approved as follows, except for slight changes in phraseology:

Active members of the Massachusetts Medical Society shall be entitled, on conditions hereinafter specified, to receive, without personal expense therefor, legal advice and court service of an attorney or attorneys-at-law in the employ of the society, for the purpose of conducting their defense in any court in this commonwealth, when they are accused of malpractice, or of illegal transactions in connection with the commitment of persons to institutions for the insane.

The legal services herein provided for shall be granted only on the following conditions:

First. Active members of the society desiring to avail themselves of the privileges of this act, shall make application therefor in writing to the secretary of the society, and shall show to his satisfaction that they are members in good standing in the society, and that all of their pecuniary obligations to the society by way of dues and assessments have been duly discharged. They shall also furnish the secretary at his request with a complete and accurate statement of their connection with and treatment of persons on which complaints against them are based, giving dates of attendance, names of and residences of nurses and of other persons cognizant of facts and circumstances necessary to a clear and definite understanding of all matters in question, and shall furnish such other relevant information, if possible, as may be required of them by the secretary or the attorney of the society.

Second. They shall agree not to compromise the complaints against them nor to make settlement of them in any manner without the advice or consent of the society given through its attorney, nor shall they employ other counsel in aid of their defense without the consent of the society.

Third. In the event that they shall, without the advice or consent of the society, determine to settle or compromise complaints against them, they shall reimburse the society for the expenses incurred in undertaking their defense, and in default thereof, they shall be deprived of further privileges under this act.

Fourth. In the event that members of the society shall make requests under the provisions hereof, the president and secretary acting together shall have the power to grant the same, or for cause to reject them, as the case may be, and to make such further provisions or requirements as may be deemed necessary for carrying out the purpose and intent of this act.

Fifth. It is to be distinctly understood by each and every member of this society that under no conditions or contingency will the Massachusetts Medical Society pay any sums awarded in settlement or compromise, or by verdict or otherwise against any member sued for alleged malpractice, and each member in applying for the services of the attorney of the society in any malpractice case shall agree not to obligate in any manner the Massachusetts Medical Society, or any persons connected therewith, to the payment of any sums whatsoever for any purpose, except as may be specified in this act.

Sixth. This act shall take effect on its passage by the council and approval by the society, and shall apply only in cases arising subsequent to its enactment, and during the applicant's membership in the society.

Protection of Milk Supply.

Resolutions introduced by DR. ARTHUR T. CABOT, Boston, were passed calling for increased protection to the milk supply and suggesting that proper legislation be urged. The recent epidemic in Jamaica Plain, Boston, was cited in which 400 cases of typhoid with 30 deaths followed the distribution of a contaminated milk supply.

Election of Officers.

The following officers were elected: President, Dr. Silas D. Presbrey, Taunton; vice-president, Dr. Daniel E. Keefe, Springfield; secretary, Dr. Francis W. Goss, Roxbury (re-elected); treasurer, Dr. Edward M. Buckingham, Boston (re-elected); librarian, Dr. Edwin H. Brigham, Brookline (re-elected; and the following standing committees:

Arrangements.—Drs. Lincoln Davis, Boston; Louis W. Gilbert, Brookline; Channing C. Simmons, George H. Francis, Brookline, and Arthur N. Broughton, Boston.

Publications.—Drs. Oliver F. Wadsworth, George B. Shattuck, and Herbert L. Burrell, all of Boston.

Membership and Finance.—Drs. Francis W. Goss, Boston; Walter Ela, Cambridge; Charles M. Green, Boston; Algernon Coolidge, Jr., Boston, and Samuel Crowell, Boston.

To Procure Scientific Papers.—Drs. Ralph C. Larrabee, Charles Harrington, Fred. B. Lane, Robert B. Greenough, all of Boston; Christopher Seymour, Northampton, and Edward W. Taylor, Boston.

Ethics and Discipline.—Drs. Leonard A. Wheeler, Worcester; J. Arthur Gage, Lowell; Henry Jackson, Boston, and John W. Bartol, Boston.

Medical Diplomas.—Drs. H. E. Marian, Orville F. Rogers, Boston, and Herbert W. Newhall, Lynn.

Medical Education.—Drs. Harold C. Ernst, Horace D. Arnold, and Charles H. Williams, all of Boston.

State and National Legislation.—Drs. George W. Gay, Newton; George G. Sears, Boston; Daniel D. Gilbert, Boston; Charles H. Cook, Natick, and C. F. Wehington.

Annual Dinner.

Following the annual dinner, in which 1,200 participated, the president gave the opening address.

DR. GEORGE W. GAY, Newton, outlined the process of medical legislation during the past year and spoke of the splendid work of Drs, Frank G. Wheatley of North Abington and Dr. Faxon in the State Senate, and of Dr. Oliver in the House, in presenting rational views to their colleagues on matters of public health.

ACTING GOVERNOR EBEN DRAPER was introduced and said that if any improper medical legislation occurred in the legislature it was the fault of the profession. If the medical profession will explain matters to the law-makers they are only too willing to act and to vote sanely. He had only words of praise for the skilful medical attendants of Governor Guild who brought about such a happy result. He spoke highly of Drs. Copp, Fernald and Drew (fellows of the society), whose efforts at the head of the state's institutions for the insane, degenerate and misbehaved individuals, have redounded to the great credit of the state.

REV. EDWARD CUMMINGS, Boston, spoke of the new "medicated theology." He felt that in all diseased states of mind no one was quite so well fitted to effect good results as the intelligent and competent physician, but suggested that perhaps medical men might go a little farther than is their wont in complaints mental and psychologic, and fill in any gap that may formerly have been left in such cases, and by so doing he thought the best solution of the treatment of such cases would be attained. In addition he considered the duty of the physician was very plain and lay in enlightening the patients and public on the elements of cure of the so-called social evil.

REPRESENTATIVE LUCE, Somerville, mentioned the great decrease in the death rate in preventable diseases due to the intelligent enforcement of judicious public health laws. He pleaded for more information on such proposed laws and said that just laws would then be passed. He said that the problems of degeneracy and alcoholism would best be solved by increased medical knowledge properly disseminated.

DR. HERBERT L. BURRELL, Boston, was introduced as representing the American Medical Association and as its president. He extended the cordial greetings of the national body to the state body on the occasion of its one-hundred and twenty-seventh annual assembly. He gave a glowing account of the Chicago meeting, and said that the association had now 31,000 members, and was affiliated through the county societies with 88,000 physicians. The great society is proud of Massachusetts for giving to the world Boylston on vaccination; the Warrens on surgery; Morton on anesthesia; Bigelow on the hip; and Bowditch on state medicine. The association looked back on its successful Boston session of 1906 with the greatest pride. He mentioned the large registration at the recent Chicago session, of 6,400 physicians. Chicago was for a time a medical city. The social side was not the least helpful of the functions. The scientific work was truly wonderful and Dr. Harrington's oration on state medicine created a profound impression. The American Medical Association desires the valued conservative assistance which Massachusetts can so well give. He quoted the opinion of a large

medical gathering in Edinburgh in which it was stated that "The Dorchester (Boston) Medical Club had the highest code of ethics in the world." He highly praised Dr. Gorgas in his great Panama undertaking.

DR. GAY then introduced Dr. Robert W. Johnson, president of the Baltimore Medical College and Dr. Silas B. Presbrey, newly-elected president of the Massachusetts Medical Society, to the members of the society.

MEDICAL LIBRARY ASSOCIATION.

Eleventh Annual Meeting, held at Chicago, June 1-2, 1908.

The President, DR. GEORGE DOCK, Ann Arbor, in the Chair.

The Membership.

The secretary reported that the membership list as corrected contains 65 library members, 42 paying individual members, 2 honorary members, making a total of 109. To this has been added a list of 9 non-paying representatives of library members.

The following applicants were admitted to membership in the association: Library members, Vancouver Medical Library, Vancouver, Canada; John Crerar Library, Chicago. Individual members, Dr. Carl E. Black, Jacksonville, Ill.; Miss Helen Hutchinson, Michael Reese Hospital, Chicago; Gen. A. C. Girard, Chicago.

The executive committee, at its February meeting, advised the dropping from membership of 18 libraries and 27 individuals for non-payment of dues.

The amount of money received by the treasurer had fallen to such an extent that the funds available for the management of the exchange and the *Medical Library and Historical Journal* were entirely inadequate to maintain the exchange in a satisfactory condition. The committee advises, therefore, that the exchange be discontinued, unless a much more satisfactory financial arrangement can be advised.

Discussion of the Bureau of Exchange.

The manager of the exchange stated that 1,717 bound volumes and 4,285 numbers of journals had been sent to 30 libraries. Nominally the exchange was supposed to receive $30 monthly from the treasurer of the association and this amount, if received regularly, would cover all costs; as a matter of fact, however, not a penny was received by the exchange from the association since the last annual meeting till May 28, 1908. On that date $60 was received in payment of the appropriation for July and August, 1906. The same condition obtained in reference to the payment of the association's subscription to the *Medical Library and Historical Journal* for its members. The December and March numbers of the *Journal* were in press and would be issued during June, 1908. It was planned to issue the June, 1908, number during July. Unless funds are provided for the uninterrupted activity of the exchange, he recommended that the lists of material for disposal be prepared and sent out with the provision that each member, after designating "wants," shall agree to pay a certain sum (say 5 cents for each bound volume and 2 cents for each number of a journal) for such wants as may be supplied, provided shipment of the indicated wants is made within one month of the date of receipt of such lists.

MR. CHARLES PERRY FISHER then read a paper on "The Association of Medical Libraries, 1898-1907, Principally in Regard to the Exchange." He stated that the exchange was opened in Baltimore in 1899, the necessary funds being raised by subscription. In 1904 the annual dues were raised to $10 for each library membership and $5 for each individual membership and the exchange was moved to Brooklyn. From 1905 on, the main incentive to membership in the association was the exchange and the expected benefits to be derived from it. For this reason and on account of the numerous complaints that have been received, Mr. Fisher prepared tables showing the receipts and expenditures of the treasurer and the receipts and distributions of the exchange. From these tables it would appear at a glance that the treasurer "has lived within his income." But on analysis it will be seen that the full amount of the appropriation to the exchange has not been paid for the past three years. If all the members met their obligations, the income from dues at $10 per annum would cover all expenses. In 1907 there were 65 library and 44 individual members. The dues, if paid, would amount to $870. As some action is imperative in consideration of the complaints made to the officers of the association, and from the fact that the membership has been greatly reduced by the number of libraries that have deliberately defaulted in payment of their annual dues and thereby forfeited their membership in the association, Mr. Fisher suggested the following points for discussion:

1. Shall the finance committee make an effort with the assistance of individual members to raise an "endowment fund" of, say, $10,000, the income to be used in furthering the purposes of the exchange?
2. Shall we discontinue publishing our transactions and devote our entire income to the exchange?
3. Is it possible to have the exchange represented by some officer of the association whose duty it shall be to arrange exchanges between libraries direct?
4. Shall the Medical Library Association continue its work on lines similar to those of the American Library Association without attempting to support a bureau of exchange?

DR. GEORGE DOCK, Ann Arbor, thought the existence of the exchange a purely business matter. Without it the future of the society did not seem very important. It has been said that the exchange is of no value to the large libraries. This, he thought, was a mistake. Small interior libraries are often in a position to furnish material difficult to obtain, even if of no great pecuniary value. Moreover, all the large libraries have been generous in sending material to smaller libraries, and they will no doubt continue to do so. There is no great gain from sending duplicates to the auction room. The old book business in America is so poorly organized that it is difficult or impossible to depend on that either for selling or buying. Dr. Dock quoted figures prepared by Mr. Koch, librarian of the University of Michigan, showing that duplicates could be handled at a cost of about 4 cents a volume by using printed lists of wants and duplicates. Of course, the cost would vary in different places, but it seemed to him possible to continue the exchange with great profit to all concerned.

On motion of Mr. Fisher it was voted that the bureau of exchange be continued.

An offer from the Library of the Medical and Chirurgical Faculty of Maryland to take back the exchange, provided necessary arrangements were made for the payment of incidental expenses, was read by the president. General Girard thought Chicago would be a suitable place for the exchange, because of its central location and the large number of physicians there. He spoke of the possibility of the John Crerar Library providing room for it.

Mr. John S. Brownne of the Academy of Medicine, New York, and Dr. William Browning of Brooklyn were appointed by the president to confer with Mr. Huntington and arrange a settlement of the accounts of the association and propose a method for the future management of the exchange, with power to act.

It was voted that the office of manager of the exchange be declared vacant pending the action of the committee. Mr. Huntington's report as manager of the exchange, on motion of Mr. Andrews, was referred to the same committee.

Election of Officers.

The following officers were elected: President, Dr. George Dock, Ann Arbor, Mich; vice-president, Dr. John H. Musser, Philadelphia; secretary, Miss Ada Bunnell, State Library, Albany, N. Y.; treasurer, Dr. George D. Hersey, 148 Broad Street, Providence, R. I.; executive committee, Clement W. Andrews, John Crerar Library, Chicago; Dr. L. H. Taylor, Wilkesbarre, Pa.; Dr. H. Winnett Orr, Lincoln, Neb; the president, secretary and treasurer, ex officio, with Dr. Dock as chairman; finance committee, Charles Perry Fisher, Philadelphia; Dr. G. N. J. Sommer, Trenton, N. J.; Dr. J. George Adami, Montreal, Canada; Dr. George D. Hersey, Providence, R. I.; Miss Metta M. Loomis, Chicago.

At half past 6 o'clock the members were entertained at dinner at the Union League Club as guests of Dr. Bayard Holmes.

The following were among the papers read: "The History of the Terminology of the Disease Known as Graves', Base

dow's, etc; A Contribution to the Study of Medical Nomenclature," Dr. George Dock, Ann Arbor, Mich. (This paper will appear in full in THE JOURNAL.) "The Department of Medical Sciences of the John Crerar Library," Gen. A. B. Girard, Chicago; "The Function of the Library in the Curriculum of the Medical School," Dr. Bayard Holmes, Chicago; "The Use of Current Medical Literature by the Small Medical Library," Dr. Carl E. Black, Jacksonville, Ill. Miss Charlton's paper on "The Early Medical Profession in Canada" was read by Dr. Dock. "The Development of Orthopedics as a Special Branch of Medical Literature," Dr. H. Winnett Orr, Lincoln, Neb.

Medicolegal

Liability of Corporation for Employment of Physician by President—Cross-Examination and Form of Charge for Services.

The Supreme Court of Washington says that the case of Russell vs. B. Schade Brewing Company was brought against B. Schade and B. Schade Brewing Company, a corporation, as defendants, to recover for services rendered to an injured employé of the company by the plaintiff as a physician and surgeon. The defendants admitted the injuries to the employé, but denied that they employed the plaintiff to treat him. The trial resulted in a judgment against the brewing company for $1,186, which is affirmed.

The evidence being deemed sufficient to show that Schade intended in behalf of the corporation to employ the plaintiff, and that he intended that the latter should so understand it, the question was presented as to whether he had the authority to bind the corporation. It was admitted in the pleadings that he was at the time the president of the corporation. But, under many authorities, the mere fact that he was the president did not of itself empower him to make the contract.

The rule followed in Illinois, as stated by the Supreme Court of that state in Bank of Minneapolis vs. Giffin, 168 Ill., 314, is to the effect that, as a general rule, a corporation acts through its president and through him executes its contracts, and that an act pertaining to the business of the corporation not clearly foreign to the general power of the president, done through him, will, in the absence of proof to the contrary, be presumed to have been authorized by the corporate body. The court recognized that an exception to the general rule may be created by the provisions of the by-laws of a corporation limiting the powers of the president, but held that, in the absence of proof that such by-laws existed, the presumption of authority prevailed.

If the above rule should be applied here, then Schade, being the president and head of the corporation, would be presumed to have been authorized, since there was no proof to the contrary. There was no proof that the by-laws of the corporation, or any other act of the corporate body, had placed any limitations on his power in the premises. The Illinois rule was, however, criticized by the defendant company as not being in harmony with the weight of authority.

It was true that the testimony in the case at bar did not comprehensively cover the subject of the conduct of Schade in his relations with the corporation in general. It did show, however, that at the time the employé in question was injured Schade was at the brewery, that he immediately assumed to give directions as one apparently in charge, and that employés present appeared to expect him to do so. His consent to the calling of the plaintiff was sought and obtained. The plaintiff was called under his directions, and, when he arrived at the brewery, he mentioned to Schade the necessity of taking the patient to the hospital at once. Schade thereupon gave directions to the employés of the company to order an ambulance for that purpose, which was done. He afterwards talked with the plaintiff, also with the injured man, and with a nurse who served the latter as one having general powers of management. The confinement of the injured employé covered a period of several months, during which time the plaintiff performed two amputations on one of the patient's legs, and otherwise treated him almost from day to day. These facts were well known to Schade, and he was bound to know that the services were being rendered in reliance on his authority to make the employment. Having this knowledge as the president and head of the corporation, it should not be said that the corporation itself was under such circumstances wholly without knowledge of the situation. Schade was not only known to the plaintiff as the president of the corporation, but there was sufficient evidence to make a prima facie showing that he assumed to direct its affairs, and that he was permitted by the corporation to hold himself out and to act as one exercising apparent general authority.

After such a prima facie showing, it devolved on the corporation to show that Schade did not have the authority, if such was the fact. This was not done, and the court thinks, in view of all the evidence, there was no error in entering judgment against the corporation. In so holding, however, the court does not wish to be understood as at this time giving its full allegiance to the Illinois doctrine as heretofore stated, that the presumption of authority arises from the mere fact that the employment is made by the president of a corporation. As has been seen, the facts of this case were such as placed it in another and larger class of cases, which require some appearance of active direction of corporate affairs in order to raise the implication of authority.

The court does not consider that error was committted in refusing to permit the cross-examination of the plaintiff with reference to what he would have done if Schade had not made the alleged promise to pay him for the services. The court says that cross-examination for the purpose of ascertaining all the facts and circumstances that actually existed was proper; but it was wholly immaterial what the plaintiff might or would have done under merely supposed circumstances which he asserted did not exist, and it was not error to exclude cross-examination on such a purely speculative subject.

Nor does the court agree with the contention that the entry in the plaintiff's book: "Account of John Blickensdorfer, residence care of the Schade Brewing Company," was an admission that the charge was not at the time made against the company, but against the injured man. The court says that the plaintiff testified that it was not so intended, but that the entry was simply his method of identifying the account as that of the company for services rendered Blickensdorfer. The account book was one with certain printed headings, and blanks left for entries. The word "residence" was printed, and was not erased. The actual entry the plaintiff testified was made without any reference to the matter of residence. The oral evidence was explicit as to the employment, and it was not to be excluded from consideration by the introduction of a mere loose memorandum not intended to be a permanent memorial of the agreement, to which class of writings entries made in books of account belong.

Proper Construction of Statute Making Communication to Physicians Privileged—Admissible Evidence.

The Supreme Court of Missouri, Division No. 1, says, in the personal injury case of Green vs. Terminal Railroad Association of St. Louis, that Section 4659 of the Revised Statutes of Missouri of 1899 provides that: "The following persons shall be incompetent to testify: . . . Fifth. A physician or surgeon, concerning information which he may have acquired from any patient while attending him in a professional character, and which information was necessary to enable him to prescribe for such patient as a physician, or doing any act for him as a surgeon." This statute creates a privilege unknown to the common law. In that particular it stands on a different foot than a similar privilege relating to an attorney and client. As shown by a table prepared by Judge Jacob Klein and inserted as a note to Gartside vs. Insurance Company, 76 Mo., 452, such statute was first enacted in New York in 1828 and next in Missouri in 1835;

the Missouri statute being substantially a copy of that of New York. A similar statute was adopted in Michigan in 1846, and it is not without significance that this court has levied tribute time and again on adjudications of the higher courts of those two states in interpreting its own statute.

Though in derogation of the common law, courts have not applied the rule of strict construction sometimes applied to statutes of that character. To the contrary, the right doctrine seems to be that the policy of the statute is an elevated one. It was intended to invite confidence between patient and physician and to prevent a breach of such confidence, and should be so construed as to further its life and purpose.

The ultimate object of every judicial inquiry is to get at the truth. Therefore no rule of law standing in the way of getting at the truth should be loosely or mechanically applied. The application of such law must be with discrimination, so that it may have the legislative effect intended for it, and yet the investigation of truth be not unnecessarily thwarted.

Evidently the legislature had these considerations in mind; for the language used in Section 4659 plainly restricts the privilege created. The statute does not say, in effect, that the door of the sick room shall be locked once for all. It does not say, in effect, the mouth of the physician or surgeon shall be closed once for all. The wise general rule being that the admissions of a party to a suit made outside the courtroom are inadmissible in evidence against him, the statute does not say that all such admissions made to a physician or surgeon are privileged. It stands precisely the other way. The information under its ban is not all information acquired from a patient, but is such only as was "necessary to enable him to prescribe for such patient as a physician, or doing any act for him as surgeon." These are clear words in the law, and under no canon of construction should they be interpreted out of the law by refinement, or because of fanciful ills. In other words, the danger of frittering away this statute is not to operate as a scarecrow frightening courts from their duty to give to every word of it a due office and meaning, being zealous and astute at all times to see to it that the statute be so construed as not to strike down its obvious purpose. To this delicate and discriminating task courts have addressed themselves.

The New York court in some cases in one particular went further possibly than this court has gone in regard to the burden of proof. It held that the burden was on the plaintiff to show that the testimony was privileged and came within the provisions of the statute. This court has indicated that there was a presumption the other way. But this court is in accord with the New York court in holding that the law must be applied with discrimination, and that all information given by the patient to the physician is not privileged, but that the privilege extends only to information of the character mentioned in the statute. The rule in Michigan is the same way.

In this case the testimony of certain surgeons at a hospital used by the defendant company for the benefit of its employés needing medical or surgical aid was admitted to prove that the plaintiff was not in the open where he could be seen, but was between the cars when a backing train collided with standing cars—that is, he was concealed—when injured, precisely as his statement made to the claim agent showed and precisely as the defendant's other evidence tended to show, and contrary to his evidence at the trial. The court is of the opinion that the testimony of the surgeons was competent. It says that a case might be imagined where the method by which a man lost his arm was an element essential to correct surgical or medical treatment, but no case can be imagined within the realm of sense where surgical or medical treatment in any wise depended on whether a man was squatted in an open place or squatted in a concealed place when hurt. The surgeons testified they did not need and did not acquire the information for surgical purposes. It stood then nakedly as an admission and without privilege under the Missouri rule. Hence the testimony was admissible, and the court was not justified in disturbing the verdict because the testimony was let in.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal.

July 16.

1 *Endocarditis. A. K. Stone, Boston.
2 *Fresh Animal Sera in Hemorrhagic Conditions. T. Leary, Boston.
3 *A Typhoid Carrier Fifty-two Years After Recovery. D. Gregg, Boston.
4 Obliterating Endarteritis: Types and Their Surgical Importance. C. F. Painter, Boston.
5 Traumatic Focal Telangiectasis of a Tendon. A. T. Legg, Boston.

1. **Endocarditis.**—Stone prefers a division of endocarditis into an infective and an arteriosclerotic type rather than into a simple, or benign, form and an ulcerative, or malignant, type. The causal element of these lesions is not yet known. Arteriosclerosis is not infrequent in children, and persons who have had typhoid are more likely to have the lesions in later life than those who have not. The *Spirochæta pallida* may be the active cause in syphilitic cases. In some cases the active infective process may do its work on the blood vessels rather than on the heart muscle. The disease is important according to the situation of the lesion. The amount of the disease and its conditions may vary as much as do similar infective conditions in the knee or other joints. There may be an infection with so virulent an organism that productive inflammatory processes may be accompanied by destructive ones, or the newly formed tissue may be unable to maintain its nutrition and break down from sheer rapidity of its production. When there has been old inflammatory disease of the valves there is a tendency for a new and acute process to develop. As to the bacteriology of acute ulcerative and malignant endocarditis, there is nothing to add to what is generally known about septicemia. The point of entrance of the infective organisms may be very small, indeed; general infection may follow after mild sore throats, exacerbations of urethritis, or small pustular eruptions. In all conditions in which a general infection may develop the heart must be watched with the greatest care and the symptoms which might arise from the pressure of ulcerative surfaces must be interpreted in terms of emboli and infarcts. A great difficulty in the way of a just diagnosis of ulcerative endocarditis is that these well-marked pathologic conditions often give rise to practically no symptoms associated in our minds with valvular disease of the heart. Stone reports a series of illustrative cases.

2. **Fresh Sera in Hemorrhages.**—Leary discusses the practical value of fresh animal sera in the treatment of hemorrhagic conditions. He has made use of rabbit serum entirely in his observations, rabbits being easily kept and subject to fewer diseases than horses are. It is possible to obtain large quantities of serum aseptically by cardiac puncture without seriously disturbing the animal. He describes the technic and says that by this method serum can be introduced into the patient within two hours after its removal. He mentions the use of diphtheria antitoxin for this purpose, and discusses the choice of methods—intravenous or subcutaneous. He would limit the intravenous use to extreme cases in which immediate results are important. He discusses serum sickness and reports 20 cases, in 15 of which hemorrhage had already appeared, and in the remaining five it was used prophylactically. The cases comprise jaundice, hemorrhage of the newborn, hemophilia, purpura, postoperative cases, uterine and typhoid hemorrhage.

3. **An Extraordinary Typhoid Carrier.**—Gregg reports a case in which 7 cases of typhoid occurred among the inmates of a small boarding house in a farming town, between August, 1905, and March, 1908. The mistress, who prepared all the food herself, had had typhoid in 1856. No other cases occurred in the neighborhood at the times the respective patients were seized. An examination of the blood and urine proved negative, but examination of the feces gave pure cultures of a bacillus in every way similar to the typhoid bacillus. The same results followed examination two weeks later. There was no other discoverable source of infection. The woman herself was in excellent health.

New York Medical Journal.

July 18.

6 *Cesarean Operation: Indications and Technic. J. O. Polak, Brooklyn, N. Y.
7 Dies Caniculares. J. Knott, Dublin, Ireland.
8 *Syphilis Extragenitally Acquired in Early Childhood. F. C. Knowles, Philadelphia.
9 *General Anesthesia in Mouth, Nose and Pharynx Surgery. D. Stetten, New York.
10 Neuroglioma Gangliocellulare of Brain; Operation; Recovery. T. M. T. McKennan, Pittsburg and F. R. Proescher, Pittsburg.
11 A New Corset for Gastroptosis. A. Bassler, New York.
12 Dermoid Tumor of Conjunctiva. M. J. Levitt, Brooklyn, N. Y.
13 Renal Pyuria without Apparent Kidney Lesion. I. Levin, New York.

6. **Cesarean Operation.**—Polak discusses the absolute and relative indications for Cesarean section. In the former he includes a conjugata vera less than 6.7 cm. (2⅝ inches), high degrees of kyphosis, osteomalacia, spondylolisthesis and Naegeli pelves, new growths in pelvis or at pelvic brim, or fibroma or other growths that have become incarcerated in the bony pelvis. Also dense rigid cicatrization of the vagina or from cervical or rectal cancer. In relative indications he thinks the upper limit of pelvic contraction should be put at 8.5 cm. in flat pelves and 9 cm. in the generally contracted pelvis, thus placing the operation in competition with symphyseotomy or pubiotomy, induction of premature labor and high forceps in those cases where the head does not tend to engage the brim. Procrastination for "the test of labor," Polak considers detrimental to the mother. He is rather against eclampsia *per se* as a relative indication, as such patients stand shock and sepsis badly, and are, therefore, not good operative risks. The small number of viable children met with in central implantation of the placenta, coupled with our increased facilities for checking hemorrhage and dilating the cervix since the introduction of the Pomeroy bag, lead Polak to prefer intrapelvic operation in these cases also. He includes as relative indications the class of physically unfit women in whom the expulsive powers are too weak to overcome normal resistance (Reynolds), and women with endocardial lesions who have shown signs of broken compensation prior to pregnancy. Where the pelvic outlet is so contracted as to make forceps delivery impossible, Cesarean section comes into competition with embryotomy, as is also the case in incarcerated tumor and displacement of cervix owing to previous ventrofixation. But he insists emphatically on the fact that when section is likely to be necessary it should be determined on if possible in advance and be performed as a primary, not a secondary, operation. He limits the vaginal operation to primiparous eclamptics with long rigid cervices, and before viability, or before term. Describing the technic in detail, he concludes: "The Cesarean operation, properly chosen, gives the woman and child equal chances, and deserves a more extended use in the hands of the abdominal surgeon."

8. **Syphilis in Childhood.**—Knowles enumerates the various methods whereby syphilis may be innocently acquired in childhood, as follows: Parturition, circumcision, vaccination, breast feeding, hand feeding, fondling, household utensils, toilet articles, unsterilized surgical, dental and electrical appliances, careless and unclean methods in caring for wounds and removal of foreign bodies, and miscellaneous sources. He discusses each of these heads in detail. Among the miscellaneous sources he instances a chancre on the buttock from contact with the mother's vulva (Trousseau); inoculation of a scratch on the forearm of a 9-year-old girl from mucous patches on the anus of an infant she carried (Dowse), a case of fatal ulcerative syphilis; using a conductor's whistle (Taylor); a boy smoking his uncle's discarded cigar stump (Englesied); an infant poking its fingers into other people's mouths and then into its own (Pontet); inoculation by the mother's finger (Sigmund). He records a case of his own in which the primary sore appeared on the left cheek and escaped recognition until after the appearance of secondaries. The source of infection was found in the mother, though the primary infection was not obvious and the father was clear. He says: "The mother evidently contracted the disease from some outside, unknown, possibly innocent source."

9. **Anesthesia in Oronasal Surgery.**—Stetten deals with the class of prolonged operations, short ones, such as tonsil or adenoid operations, rarely causing concern to either operator or anesthetist. He discusses the various measures that have been tried to overcome the difficulties—inspiration of blood and mucus, mutual interference of operator and anesthetist, etc.—and points out the disadvantages respectively of tracheotomy anesthesia, inhalers (Junker, Braun, Gwathmey), rectal etherization, various postures and intubation. He has adopted with certain modifications the method proposed by Crile in 1903. Briefly the plan as originally suggested for mouth cases is a double tubage of the nares into the pharynx, and a packing of the oropharynx with gauze. In nose operations the two tubes are passed through the mouth and the oropharynx and nasopharynx are packed. As the success of the method depends mainly on carefully carried out technical details and the failures one meets with are usually due to lack of attention to these, he gives an exact description of the plan he follows. The method has been extended in its scope to include other head and neck operations, e. g., mastoid, goiter, gland and brain operations. He suggests the use of the double tubes employed in this method of anesthesia, with an artificial respiration bellows, in cases where artificial respiration is necessary.

Medical Record, New York.

July 18.

14 The Standard of Medical Education. H. B. Ward, Lincoln, Neb.
15 *Etiology of Paralysis of the Recurrent Laryngeal Nerves of Peripheral Origin. D. B. Delavan, New York.
16 *Ocular Reaction to Tuberculin. Capt. C. N. Barney and Capt. R. Brooke, Jr., U. S. Army.
17 *Deutschmann's Serum Against Infectious Diseases E. Caravia, New York.
18 *A New and Efficient Method of Room Disinfection. W. B. McLaughlin, New York.

15. **Peripheral Recurrent Laryngeal Paralysis.**—Delavan discusses this subject under the headings of paralysis due to: 1, Traumatism or laceration of nerves; 2, mechanical pressure on nerve; 3, toxic influences. Injury may occur in accident, or be self-inflicted or be caused during operation. Pressure may occur from new growth, aneurisms, heart disease, diseases of pleura and scoliosis. Toxic causes are less frequent than those due to injury or pressure. They may be due to drugs, especially lead, arsenic, antimony, copper, potassium iodid, iodoform, and perhaps potassium cyanid and phosphorus; also alcohol, opium, belladonna, cannabis indica and cocain. Acute infections also may be responsible—typhoid, acute rheumatism, influenza, diphtheria, typhus, pneumonia, puerperal fever, erysipelas, measles, scarlet fever, gonorrhea, serum therapy. It is impossible to escape the conviction that some of the cases of recurrent paralysis found accompanying violent inflammations of the throat have been due to the effects of superficial irritation.

16. **Ocular Tuberculin Reaction.**—As a result of tests in 321 cases, including 250 tuberculous, Barney and Brooke consider that the diagnostic value of the ocular reaction is as great as that of the Widal test for typhoid fever. The greatest practical value of the test is in assisting in the diagnosis of the tuberculous basis of slight signs at one apex when bacilli are not present in the sputum, and in the diagnosis of tuberculosis localized outside of the lungs. If no reaction is obtained to a properly given dose of one-fourth of a milligram in an individual, the chances are ninety-seven out of a hundred that he has no active tuberculosis. If reaction to this dose occurs in an apparently healthy person the probabilities are that he has a small focus of tuberculosis, either active or clinically inactive, together with strong resistance; but as this has not been unequivocally demonstrated, and as the lesion, even if it does exist, may never give symptoms, it is not wise in practice to assume that the occurrence of reaction invariably denotes the existence of tuberculosis. The occurrence of reaction in an apparently healthy person should, however, put the physician on the watch to detect the earliest symptoms of tuberculosis, in case any should appear. The test would be of value as a rough test in large numbers of people, as in recruits, but the presence of reaction should only lead to more careful examination and not in itself be taken as certainly indicating clinically active tuberculosis.

17. **Deutschmann's Serum.**—Caravia discusses and reports observations on the use of Deutschmann's serum for use

against infectious diseases. This serum is not a bactericid or an antitoxin; it is a polyvalent serum neutralizing germs of all kinds, not of one kind only. He refers to Deutschmann's article in the *Beiträge zur Augenheilkunde*, August, 1907. Caravia has found it serviceable in acute and chronic purulent microbic inflammations of the eye. He reports five cases. It has also been effectively used in tonsillitis, measles, scarlet fever, gluteal swelling and peritonitis.

18. **Room Disinfection.**—McLaughlin discusses the Maine method, the Walker method and the Stewart method, which he considers lacking in penetrative power. McLaughlin finds that by mixing formalin and phenol (carbolic acid) great penetrating power is obtained. He uses a mixture of 75 per cent. of a 40 per cent. formaldehyd solution and 25 per cent. of phenol, allowing 8 ounces of this mixture to 1,000 cubic feet, and keeping the room closed for twelve hours. A sheet is saturated with the solution and hung in the room. A resistant strain of the *Bacillus pyocyaneus* was killed under the carpet, in the pocket of a tightly rolled coat and in many other searching tests.

Medical Fortnightly, St. Louis.

July 10.

19 Plain Labels on Germ Friends. A. Abrams, San Francisco.
20 The Bacillus of Mind and Its Decrees. A. S. Ashmead, New York.
21 *Clinical Study of a Case of Adiposis Dolorosa. W. W. Graves and W. H. Cook, St. Louis.

21. **Adiposis Dolorosa.**—Graves and Cook report a case of this disease in a negress, aged 62, and comment exhaustively on the differential diagnosis of the disease.

Lancet-Clinic, Cincinnati.

July 11.

22 Colorado and the Eastern Pulmonary Case. W. A. Campbell, Colorado Springs, Colo.
23 Pregnancy When Complicated by Tuberculosis. H. A. Miller, Pittsburg.
24 Tracheo-Bronchoscopy, Esophagoscopy and Gastroscopy. J. W. Murphy, Cincinnati.
25 Some Features of Femoral Hernia. W. D. Haines, Cincinnati.
26 Obscure Fractures Discovered by Roentgen Examination. S. Lange, Cincinnati.

American Journal of Medical Sciences, Philadelphia.

June.

27 *Use and Abuse of Digitalis. T. C. Janeway, New York.
28 Clinical Study of Heart Cases. L. A. Conner, New York.
29 *Irregularities of Heart Resulting from Disturbed Conductivity. J. Erlanger, Madison, Wis.
30 *Jugular Pulse of Man. G. M. Piersol, Philadelphia.
31 Primary Carcinoma of the Appendix. C. A. McWilliams, New York.
32 Primary Carcinoma and Endothelioma of the Appendix. A. O. J. Kelly, Philadelphia.
33 Surgical Aspects of Dupuytren's Contraction. R. Russ, San Francisco.
34 *Torsion of Appendices Epiploicæ and Its Consequences. W. A. Briggs, Sacramento, Cal.
35 Primary Tumors of Adrenal Gland in Children. W. Tileston and S. B. Wolbach, Boston.
36 Congenital Absence of Gall Bladder. I. S. Stone, Washington, D. C.

27. **Digitalis.**—Janeway enumerates as follows the causes for failure in the employment of digitalis, in the order of their frequency and importance 1. The use of inefficient preparations. 2. Use in unsuitable cases. 3. Improper dosage. 4. Improper methods of administration. 5. Neglect of other necessary therapeutic measures. 1. Inefficient Preparations. In order that we may be sure of giving efficient digitalis, and not inactive or irritating digitalis decomposition products, the following conditions must be fulfilled: (a) The leaves must be from plants of the second year's growth, picked at the beginning of efflorescence, freed from stalks, and carefully dried. (b) The dried leaves must be kept absolutely dark and free from moisture in sealed tin or glass containers, and for not more than one year. (c) The preparation dispensed must be freshly made from these leaves in exact accordance with the method prescribed by the Dispensatory. The worst digitalis preparation is an infusion made by diluting the fluid extract, thus precipitating all its active ingredients. Other inefficient forms are the many tablets or pills containing digitalis or digitalin. The only solid form in which digitalis should be given is the freshly powdered leaf in capsule or pill. 2. Use in Unsuitable Cases. The physician who gives digitalis to slow the heart in a paroxysm of tachycardia or in fever, to produce diuresis in acute nephritis, or to remove an inflammatory pleural effusion, is foredoomed to failure; yet all these are attempted, and faith in digitalis for its rightful uses is lost in consequence. He describes the newer heart physiology, which we owe largely to Gaskell and to Engelmann, and which has illuminated many dark corners of the subject. For rapid heart action one should use digitalis only when there is also some insufficiency of the ventricles. It is the ideal drug to combat general venous stasis. Controversy has also centered around the use of digitalis in aortic insufficiency. To the author's mind the indications here are quite the same. We aim to correct function, not structural defects. Is there loss of tone and diminishing systolic output, with scanty urine, congested liver and dropsy? Then give digitalis. When these phenomena appear in aortic disease, relative mitral incompetency frequently shows itself, and therapeutically and physiologically the problem differs little from primary mitral regurgitation. On the other hand, if the symptoms are merely orthopnea or paroxysmal dyspnea, or anginoid pain, then digitalis has no place. We should get away from anatomic categories in our medical treatment. In all the surgeon's statistics, inoperable cases are carefully eliminated from the calculation of results. Medical men have inoperable cases, too; more of them than the surgeon. We must endeavor to restore function, even when anatomic change has progressed to a degree incompatible with life. But, when we come to query the value of this or that method of treatment, we are justified in attempting to separate such cases as well as may be. 3. Improper Dosage. The only guide to dosage is therapeutic result. This means a clear-cut picture of the indications for the drug in the particular case, close observation of its effects, and knowledge of its earliest toxic manifestations. 4. Improper Methods of Administration. Physicians often persist in administering the drug by the mouth, when frequent vomiting shows how little hope there is for absorption from the stomach. Two other paths of absorption are readily available: the rectum and the subcutaneous tissues. Half an ounce of infusion, per rectum, three times a day, will give about as prompt results as by mouth. 5. Neglect of Other Necessary Therapeutic Measures. A few nights robbed of their sufferings by morphin, may turn the scale in many heart cases. As an adjuvant treatment the dry diet stands high. Free purgation will help to relieve the secondary portal congestion. When anemia is marked, iron is essential. In a different category come the vasodilating drugs, which must be given with digitalis to counteract its arterial constriction in certain cases of hypertension.

29. **Irregularities of the Heart.**—Erlanger studies the differences in structure and function between the mammalian and the cold-blooded heart. By gradually compressing the normally beating mammalian heart in a specially devised clamp, all the grades of impaired activity observed in the cold-blooded heart may be obtained. These, in order of their appearance, consist of: 1, An increase in the As-Vs (pause between the contraction of auricles and ventricles) interval; 2, the occasional failure of the ventricles to respond to the regularly contracting auricles—these "ventricular silences" may recur with great regularity, for example, after every tenth, ninth or eighth, etc., auricular contraction; 3, the failure of the ventricles to respond to every other auricular contraction—a 2 to 1 auriculoventricular rhythm; 4, 3 to 1 rhythm; 5, relatively complete auriculoventricular heart block; 6, absolutely complete auriculoventricular heart block. He gives a diagram making clear the several disturbances in conductivity. The variations in the irritability of heart muscle are explained by the fact that the resting heart tissue stores within itself an unstable, energy-yielding material, the instability of which increases as it accumulates. A stimulus strong enough to elicit a contraction does so by decomposing all this material. The irritability of the heart tissue, it may be assumed, depends on the amount of the unstable substance present in it at any one time. Immediately after the heart has contracted, therefore, it contains none of the unstable substance; consequently it is non-irritable. But after the heart

has completed its contraction the material begins to accumulate rapidly at first and then more and more slowly; the irritability when it returns, therefore, increases rapidly at first, but finally becomes more or less constant. He describes sino-auricular heart block and auriculo-auricular heart block, and concludes that these are the principal ones that concern the clinician, though partial and complete block may be established experimentally between any two parts of the heart, provided one of the parts be spontaneously rhythmical, by functional connection between them; and pathologic processes might effect the same result. He concludes his article as follows: While it may be possible in particularly clear cases of auriculoventricular heart block to make a correct diagnosis without the aid of the more exact methods of investigating the organs of the circulation, the more obscure cases of this form of heart block, but especially the other forms of heart block, can be recognized only with the aid of the graphic method.

30. **Jugular Pulse.**—Piersol concludes as follows: 1. There are not sufficient grounds to doubt that the *c* wave in the jugular pulse of man is, as Mackenzie said, anything but a carotid product. 2. The jugular pulse of dogs, even when all carotid influence is eliminated, shows a small wave at the beginning of ventricular systole. 3. In man a double *a* wave is sometimes found, the second rise of which can not be identical with the wave described in dogs, since its occurrence is too early. 4. In addition to any double *a* wave in man, another wave, appropriately called wave *b*, often shows between *a* and *c* begins just after, or in the last part of, the ventricular presphygmic period. 5. Since the wave found in the jugular pulse of dogs at the beginning of ventricular systole has its counterpart in the *b* wave of man's jugular pulse, the assumption that the wave found in dogs is identical with Mackenzie's *c* wave is unjustifiable.

34. **Torsion of Appendices Epiploicæ.**—Briggs gives a synopsis of previously reported cases and adds one of his own. He summarizes his conclusions as follows: 1. Torsion of appendices epiploicæ is more frequent than the paucity of references in medical literature would imply. 2. Torsion of appendices epiploicæ usually occurs in persons more or less obese, during middle life and later. 3. Intra-abdominal torsion of appendices epiploicæ may simulate appendicitis, hepatic colic, cholecystitis, and various other intra-abdominal diseases. Torsion of appendices epiploicæ in the hernial sac may cause all the local symptoms of an acute omental or intestinal femoral or inguinal hernia. 4. Torsion of appendices epiploicæ may result in corpora aliena adiposa, in adhesions and bands, and their consequences. 5. Corpora aliena adiposa may become infected and cause general peritonitis. 6. In the present state of our knowledge anything more than a tentative diagnosis of torsion of appendices epiploicæ would be rarely possible. 7. Early operation is indicated in all cases.

Interstate Medical Journal, St. Louis.

June.

37 Practical Aspects of the Physiology of the Circulation. C. C. Guthrie, St. Louis.
38 *Vaginal Fixation of Uterus. F. A. Glasgow, St. Louis.
39 Fibroma of Trachea. W. E. Sauer, St. Louis.
40 Flannel Roller-Bandage in Umbilical Hernia in Infant. A. S Bleyer, St. Louis.

38. **Vaginal Fixation of Uterus.**—Glasgow criticizes the various measures advocated for procidentia uteri and particularly the various methods of abdominal suspension. He considers the operation of Dudley, who utilizes the base of the broad ligaments as a point of suspension, the best, and uses it "with some additional procedures which make it still more certain of success." He emphasizes the following points: First, do not operate too soon. Hold up the uterus with tampon or pessaries until the parts are in good, healthy condition and have undergone as much involution as you may expect. It is marvelous to what extent and how soon involution takes place. Second, get the bases of the broad ligament together. Third, get the fascia on either side of the vagina together. Fourth, draw uterus down toward this thickened fascia, but not far. Fifth, leave all mucous membrane intact, both on anterior and posterior wall. Sixth, get the fibers of the levator together

Archives of Pediatrics.

June, 1908.

41 Intestinal Intoxication in Infants. R. B. Kimball, New York.
42 *Advances in Infant Feeding. F. H. Lamb, Cincinnati.
43 Sanitary Milk. P. G. Heinemann, Chicago.
44 Bell's Palsy in an Infant. J. C. Gittings, Philadelphia.

42. **Infant Feeding.**—Lamb emphasizes the following points: 1. The most important thing in infant feeding is to know the exact amount of food the child receives in twenty-four hours. The only way to do this is to calculate energy quotients. 2. The percentage method is uncertain, complicated and unscientific. 3. Feed amounts, not percentages. 4. Overfeeding is one of the most common causes of nutritional disturbances in children and is a distinct clinical entity. 5. Fat is the element in cow's milk to be feared. 6. Fat produces constipation, proteids never do. 7. The curds in the stools are not proteid, but calcium soaps, fatty acids or fats. 8. Casein is not difficult to digest, does not produce digestive disturbances, and does not undergo putrefaction in the intestinal canal. 9. The newborn infant can digest starch. 10. Dextrins and starches are the most valuable adjuncts to milk feeding. 11. The volume of the food should depend on the weight of the child and never exceed 36 or 38 ounces. 12. The interval between feedings should never be less than three hours and after three months four hours.

Memphis Medical Monthly.

June.

45 *Achylia Gastrica. H. B. Kincaid, Memphis.
46 Surgical Side of the "Floating Kidney" Problem. J. A. Crisler, Memphis.
47 Treatment of Rectal Cancer. A. B. Cooke, Nashville.
48 Pregnancy at Nine Years of Age. V. I. Pittman, Cadaretta, Miss.
49 One Hundred Obstetric Cases. D. M. Hall, Memphis.
50 Gunshot Wounds of the Abdomen. A. B. Oliver, Memphis.

45. **Achylia Gastrica.**—Kincaid says that symptomatic or primary achylia is not so serious a disease as the secondary form. The symptoms of achylia are not characteristic, and in the neurotic it sometimes exists without symptoms. Intestinal symptoms appear sooner or later in half the cases. He divides cases into four classes, those: 1, Without gastric or intestinal symptoms; 2, with stomach symptoms, but without bowel disturbance; 3, with intestinal symptoms only; 4, with both stomach and intestinal symptoms. But the diagnosis can not be made from symptoms alone, but only by careful examination of stomach contents. In regard to treatment he emphasizes the importance of thorough disintegration of food. Vegetable foods are well borne, meats are only to be allowed in small quantities. Hydrochloric acid, pepsin and pancreatin are of value; the former especially in cases complicated with diarrhea and also in cases with nervous symptoms. He administers 30 to 70 drops of dilute HCl. Tincture of nux vomica before meals may be beneficial. Undigested food in the colon calls for colonic flushing and excessive mucus for gastric lavage.

Virginia Medical Semi-Monthly, Richmond.

June 12.

51 Treatment of Ante-Partum Eclampsia. J. F. Winn, Richmond.
52 Puerperal Eclampsia. M. L. Rea, Charlottsville.
53 The Eye in Diagnosis of Systemic Diseases. L. O. Mauldin, Greenville, S. C.
54 The Rheumatic Cycle in Childhood. St. G. T. Grinnan, Richmond.
55 Injection Treatment of Hemorrhoids. L. Elliot, Washington, D. C.
56 Scientific Mechanotherapy and So-Called Osteopathy. V. Ulrich, Richmond.
57 *Pathogenesis of Tabes Dorsalis. T. A. Williams, Washington, D. C.

57. **Tabes Dorsalis.**—Williams discusses the pathogenesis of tabes dorsalis and adduces considerations that compel him to accept the contention of Babinski and Nageotte, that a chronic syphilitic meningitis is responsible for what has been called tabes dorsalis, and that it was formerly disregarded on account of the tendency to the occurrence of resolution and fibrosis of the lesions. From this he concludes that cases taken early may be completely arrested, and in all cases the active manifestations may be resolved if adequately treated before the destruction of the elements has occurred, though naturally the residues of former exacerbations can not be removed.

American Journal of Surgery, New York.

June.

58 Operative Indications in Dislocation of the Humerus with Fracture. C. P. Flint, New York.
59 *Nephropexy, with Reference to an Improved Technic. F. G. Du Bose, Selma, Ala.
60 *Ischochymia Simulating Gallstone Disease. M. Einhorn, New York.
61 Non-Penetrating Abdominal Wounds. J. L. Wiggins, East St. Louis, Ill.
62 *Lymphatic and Portal Infections Following Appendicitis. R. Hill, St. Louis.
63 Diagnostic Value of Tenderness in the Ciliary Region. E. S. Thompson, New York.
64 Surgical Treatment of Trachoma. W. M. Carhart, New York.
65 Tuberculosis of the Testicle. H. Wilkinson, Kansas City, Kan.
66 Artificial Synovial Fluid. R. T. Morris, New York.
67 Fracture of the Tibial Spine. S. Epstein, New York.

59. **Nephropexy.**—Du Bose summarizes his procedure as follows: Usual position and incision. Obliteration of retroperitoneal or renal pouch by button-holing the kidney through its fatty capsule (Shoemaker). The anchoring of the nephrocolic ligament (Longyear). The insertion of sutures under the fibrous capsule of kidney in such a manner that they will not tear out (Broedel), and on the posterior surface of the kidney, bringing it in the planes of the normal position and relations and retaining it in such position, avoiding in this way kinking or torsion of the ureter (Goelet). There is no stripping of the capsule, no decapsulation and no suture within the substance of the kidney; no drainage is required.

60. **Ischochymia Simulating Gallstone Disease.**—Einhorn reports three cases and presents a table of differential diagnosis between benign ischochymia and gallstone diseases. He insists on the importance of examining the stomach contents in all cases of apparent cholelithiasis, especially when the diagnosis is not absolutely positive. It may happen that both diseases are present; such cases are not frequent, but they do occur. In these instances it is important to find out which process causes the main symptoms at the moment, so that the treatment may be directed against it. The prompt recognition of the presence of ischochymia—even if it be associated with gallstones—will always be of benefit in the correct management of the case.

62. **Lymphatic and Portal Infections Following Appendicitis.**—Hill reports an unusual case of lymphatic and portal infections following appendicitis in which apparently the primary invasion took place directly through the veins and led to a very rapid general infection. He calls attention to the need of guarded prognosis in such cases, owing to the insidious development and the obscurity of the symptoms. We are almost absolutely helpless in the presence of some severe forms of infection when the infecting organism has once passed into the general circulation. Early removal of the appendix is the lesson.

New Orleans Medical and Surgical Journal.

June.

68 *Treatment of Inoperable Cancer. H. R. Slack, La Grange, Ga.
69 Relation of Adenoids and Enlarged Tonsils to the Mental and Physical Development of Children. H. G. Savage, Warsaw, Mo.
70 Pott's Disease; Its Early Diagnosis and Treatment. G. K. Logan, New Orleans, La.
71 Tuberculosis in Infancy and Childhood. W. W. Butterworth, New Orleans.
72 Tuberculosis of the Skin. H. E. Menage, New Orleans.
73 Possibilities of Medical Organization. O. Dowling, Shreveport, La.

68. **Inoperable Cancer.**—Slack refers to a former paper (THE JOURNAL, June 27, 1897), entitled "Blue Pyoktanin in the Treatment of Inoperable Malignant Growths," and says that, though he has abandoned the hope then expressed of effecting a cure by its use alone, he has cured a number of cases by using it in connection with the *x*-rays. In surface growths he gives a tablet of methylene blue, 2 grains (.13), and extract of belladonna, ¼ grain (.016), after each meal; any ulcerating surface is dusted with 4 per cent. or 5 per cent. powder or injected with 2 or 4 per cent. solution daily. Pain and foul odor disappear, the general health is improved, and years are added to life. The patient must be cautioned that everything touched by the drug and also the urine will be stained blue.

Chicago Medical Recorder.

June.

74 *Conditions That Require the Removal of the Child from the Breast. C. B. Reed, Chicago.
75 Etiology of Acute Articular Rheumatism. G. W. Webster, Chicago.
76 Treatment of Gallstone Diseases. T. C. Kennedy, Shelbyville, Ind.
77 *Treatment of Pulmonary Tuberculosis in Illinois. J. W. Pettit, Ottawa, Ill.
78 Indication for Eye Enucleation and Its Substitutes. G. Fiske, Chicago.
79 Foreign Bodies in the Eye. G. G. Burdick, Chicago.
80 *Inflammatory Conditions within the Abdomen and Thorax Differentiated from Appendicitis. C. J. Whalen, Chicago.

74.—Published in *Surgery, Gynecology and Obstetrics*, May, 1908, and abstracted in THE JOURNAL, July 11, p. 167.

77.—Published in *Illinois Medical Journal*, June, 1908.

80. **Abdominal Inflammatory Conditions.**—Whalen says that the lesions most apt to simulate, and hence to be confounded, with appendicitis are: Salpingitis, ruptured pyosalpinx, ovarian cyst, strangulated by twisted pedicle, ovaritis and abscess of ovary, hematoma of broad ligament, cholecystitis, gallstone colic, perforated gastric ulcer, perforated intestinal ulcer due to typhoid fever, pneumonia and pleurisy, extrauterine pregnancy, intestinal obstruction, intussusception, volvulus, renal colic, retroperitoneal abscess, strangulated hernia, acute pancreatitis, enteritis, inflammatory conditions of the ileum or caput coli in the immediate vicinity of the appendix, psoitis. Pott's disease, acute indigestion, cholera morbus, ileocecal cancer, undescended testicle, twist and strangulation of omentum, diaphragmatic pleurisy, hypochondria, hysteria, neuralgia. He describes cases illustrating various difficulties and discusses the differential diagnosis between the conditions referred to above and appendicitis.

Cleveland Medical Journal.

June.

81 *Essential Hemorrhage of the Kidney. F. E. Bunts, Cleveland.
82 Points in the Treatment of Diseases of the Ear. J. M. Ingersoll, Cleveland.
83 Osteitis Deformans. O. A. Weber, Cleveland.
84 Permanent Closure of Large Perforations in the Tympanic Membrane with Increase in Hearing. W. B. Chamberlin, Cleveland.

81. **Essential Hemorrhage of Kidney.**—Bunts describes a case in which operation, falsifying the interpretation of a radiograph, showed nothing in the kidney, although subjective and objective symptoms disappeared thereafter. He summarizes the literature of 70 cases and draws attention to the following facts: 1. The cause of hemorrhage from the kidney can not be diagnosed, by present methods, in a large number of cases. 2. It is probable that there is in most cases a distinct lesion, though the absence of sufficient microscopic examinations of the exposed kidney leaves this undetermined. 3. Nephritis is the most frequently demonstrated cause of unilateral hemorrhage in this class of cases. 4. Operation promises a cure in most cases. The chief object of his paper is to emphasize the importance of removing at operation at least a sufficient amount of the kidney to permit of careful microscopic examination. In this way only can we probably eliminate the large number of kidneys which have heretofore been reported as normal and at the same time relegate to its proper oblivion the misleading name of essential hemorrhage of the kidney.

The Laryngoscope, St. Louis.

May.

85 Vaccine Therapy in Some Suppurations of the Nose and Ear; Also Technic for Determining Opsonic Indices. J. C. Beck, Chicago.
86 Labyrinthine Deafness with "Tone Island." G. E. Shambaugh, Chicago.
87 The Temporal Bone. R. J. Held, New York.
88 Primary Epithelioma of the Maxillary Antrum. S. J. Kopetzky, New York.
89 Carcinoma of the Naso-Pharynx and Sphenoid Region Which Responded to the Employment of Radium. S. Yankauer, New York.
90 Unrecognized Foreign Body in the Larynx. E. Martinez, Havana.
91 Laryngeal Neoplasms in America. J. L. Davis, Philadelphia.
92 Method of Preventing Hemorrhage During Adenectomy. S. Iglauer, Cincinnati.
93 Hemorrhage Following Tonsillotomy with Cold Wire Snare. C. R. Dufour, Washington, D. C.
94 Severe Primary Hemorrhage Following the Removal of the Faucial Tonsil. O. J. Stein, Chicago.

95 Boy's Voice in a Man Which Was Made Normal by Singing Exercises. W. L. Holt, Philadelphia.
96 Nasal Septal Forceps. S. Goldstein, New York.
97 New Procedure for the Correction of the Saddle Nose. F. E. Waxham, Denver.

Ophthalmic Record, Chicago.

June.

98 Bullet Wounds of the Orbit and Its Surrounding Parts. E. R. Williams, Boston.
99 Two Cases of Palsy of Extraocular Muscles in Graves' Disease. W. C. Posey, Philadelphia.
100 Toxic Symptoms Following the Instillation of Homatropin Hydrobromate. C. LeFevre, Philadelphia.
101 Blindness Following the Injection of Protargol in Lachrymal Sac. F. P. Lewis, Buffalo, N. Y.
102 Improved Instrument to Shorten the Subjective Branch of Refraction. J. N. Rhoads, Philadelphia.

Dominion Medical Monthly and Ontario Medical Journal, Toronto.

June.

103 Master-Minds in Medicine—John Hunter (1728-93), Great Man of Science and Surgeon. W. J. Fischer.

Journal of the Michigan State Medical Society, Detroit.

June.

104 Opsonic Theory and Technic. J. Sill, Detroit.
105 Psychic Treatment of Nervous Disorders. C. A. Stimson, Eaton Rapids.
106 Curative versus Palliative Treatment of Hernia. F. B. Walker, Detroit.
107 Historical Sketch of the Deceased Founders of the Detroit Academy of Medicine. L. Connor, Detroit.
108 Bath Treatment at Mt. Clemens for Nervous Patients. R. Leuschner, Mt. Clemens.

Journal of the Medical Society of New Jersey, Orange, N. J.

June.

109 Modern Life and Its Effects on Types of Disease. J. T. Rugh, Philadelphia.
110 The Treatment of Gallstone Disease. W. H. Lawrence, Jr., Summit, N. J.
111 "Dyspepsia," What Does It Signify? E. Marvel, Atlantic City.

Iowa Medical Journal, Des Moines.

June 15.

112 Cooperation of Public and Profession. E. E. Munger, Spencer.
113 Possibilities of Organization. C. A. Boice, Washington, D. C.
114 Iowa Medical Laws and Their Enforcement. L. A. Thomas, Des Moines.
115 Operative Points. F. E. Walker, Hot Springs, S. D.
116 Medical Publicity. F. G. Murray, Cedar Rapids.
117 Submucous Resection of the Nasal Septum for the Correction of Septal Irregularities. W. R. Murray, Minneapolis.

International Clinics, Philadelphia.

Vol. II. Eighteenth Series.

118 Treatment of Scarlet Fever, Including Prophylactic Measures Necessary to Prevent Complications. L. Fischer, New York.
119 Treatment of Syphilis by Atoxyl. H. Hallopeau, Paris.
120 Treatment by Inoculation of Bacterial Vaccines. E. Turton, Hull, Eng.
121 Serum Treatment of Bacillary Dysentery. Vaillard and Dopter, Paris.
122 Treatment of Hemoglobinuric Fever. W. H. Deaderick, Marianna, Ark.
123 Changes in Outlines of Heart, Diaphragm and Stomach During Phases of Respiration as Illustrated by X-Ray. R. J. Behan, Pittsburg.
124 Valvular Heart Disease. J. G. Cecil, Louisville, Ky.
125 Pain as Chief or Sole Expression of a Psychic State. T. Diller, Pittsburg.
126 Curiosities of Lead Poisoning. J. J. Walsh, New York.
127 Recurrent Temporary Amblyopia of Angiospastic Origin and Association of Retinal Angiospasm with Other Vasomotor Neuroses. F. P. Weber, London, and R. Gruber, London.
128 Reconstructive Surgery of Face. J. B. Roberts, Philadelphia.
129 Perinephritic Abscess in Children. C. G. Cumston, Boston.
130 Symptoms and Diagnosis of Cancer of Large Intestine. P. L. Mummery, London.
131 Treatment of Varicose Ulcer and Varicose Veins of Leg. A. D. Willmoth, Louisville, Ky.
132 Clinical Manifestations of Uterine Cancer. J. A. Sampson, Albany N. Y.
133 Gonorrhea and Pregnancy. E. B. Young, Boston.
134 Pregnancy Complicated by Uterine Fibromata in a Hemiplegic. L. Frank, Louisville, Ky.
135 After-Treatment of Cataract Extraction. W. O. Moore, New York.
136 Vision in Some Eye Diseases. L. Buchanan, Glasgow.
137 Rhinoscleroma. W. S. Gotthelf, New York.
138 Congenital Scoliosis. H. Hudson, Philadelphia.
139 Marasmus; Inherited Syphilis; Subacute Bronchitis. R. B. Gilbert, Louisville, Ky.
140 Atypical Forms of Malignant Renal Hypernephromata and Their Chemical Characteristics. H. G. Wells, Chicago.
141 Recent Research into the Pathology of Malignant Disease. C. E. Simon, Baltimore.

Vermont Medical Monthly, Burlington.

June 15.

142 Anemias. J. McCrae, Montreal.
143 Paralysis; Its Mechanical and Operative Treatment. J. C. Wilson Hartford, Conn.
144 Acute Epigastric Pain. W. J. Aldrich, H. Johnsbury.

Long Island Medical Journal, Brooklyn, N. Y.

June.

145 Prognosis in Chronic Valvular Disease. E. E. Cornwall, Brooklyn, N. Y.
146 Korsakoff's Psychosis. O. M. Dewing, Brooklyn, N. Y.
147 Corpus Luteum of Gestation. W. L. Chapman, Brooklyn, N. Y.
148 Relationship Between Rheumatism and Chorea. R. S. Cone, Brooklyn, N. Y.
149 Calculus Lodged in Ureter. R. Hazen, Brentwood, L. I.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

The Lancet, London.

July 4.

1 *Inborn Errors of Metabolism. A. E. Garrod.
2 *Thoracostomy in Heart Disease. A. Morison.
3 Rare but Important Surgical Injuries Brought on by Violent Exercise. P. Haglund.
4. *"Endemic Funiculitis." A. Castellani.
5 Abundance of Parasites in Fatal Pernicious Malaria. J. Cropper.
6 The Autonomic Nervous System in Acute Surgical Conditions. A. J. Walton.
7 Extirpation of the Lacrymal Sac. O. J. Currie.
8 Extraction of Foreign bodies. H. Chitty.

1. **Inborn Errors of Metabolism.**—Garrod, in the first Croonian lecture, emphasizes the distinction between the terms "congenital" and "inborn." The former implies simply present at birth, while the latter implies hereditary transmission. The only known anomalies which can at present be included in his subject are albinism, alkaptonuria, cystinuria and pentosuria. Theoretically, any anomaly that claims a place in the group should be present from birth and should persist throughout life, though this can not as yet be asserted of all the four named above. The evidence of congenital cystinuria is very difficult to obtain, but there is reason to believe that it is occasionally temporary or intermittent. The youngest pentosuric yet observed was a boy of 15. Albinism is probably no more common than the other inborn metabolic errors; Garrod believes cystinuria to be the least rare of the four. It stands to reason that an error of metabolism which persists from birth into adult life must be relatively innocuous. Albinism is certainly harmless. The most serious direct result of alkaptonuria is the peculiar pigmentation. Evidence is accumulating of the harmlessness of pentosuria; so that only cystinuria can be classed as actually injurious, and even its ill-effects are secondary, due, not to the metabolic error, but to the unsuitability of cystin for excretion by a mammalian genitourinary apparatus. Garrod notes the proneness of each of these errors to occur in several members of a family, most often in collaterals of the same generation. To students of heredity these errors offer a promising though difficult field for investigation. He discusses their relation to Mendel's law. The Mendelian recessive character of albinism has been well observed. The resemblance of alkaptonuria thereto, in its mode of incidence in man, favors a similar conclusion in its case. Evidence is accumulating of the occurrence of pentosuria in brothers and sisters, and no instance of its transmission from parent to child has yet been recorded. The frequency of direct inheritance and the large proportion of the offspring affected suggest that if cystinuria be transmitted on Mendelian lines, it is probably a dominant, rather than a recessive, characteristic. Garrod then discusses albinism at length.

2. **Thoracostomy in Heart Disease.**—Morison describes the case of a youth of 19 who had exaggerated aortic valvular disease, severe attacks of retrosternal pain, accompanied by quickening of pulse and heart beat and rise of systolic blood pressure, these phenomena subsiding with the pain. The cardiac action was heaving and concussive, the heart enlarged, and thrusting, not simply against a soft interspace, but against an unyielding rib. A condition of erethism was thus induced, leading to the attacks. Four and a half inches of the fifth rib and five and a half of the sixth were removed. The effect of the operation objectively and subjectively has been very satisfactory. The carotid and suprasternal pulsation is less marked, the chest capacity is increased, the painful attacks have almost disappeared, and when present are much less severe. The patient, in answer to a question, considered

son further concludes from a review of this case that one cause, at least contributory, to attacks of angina in aortic valvular disease with hypertrophied heart, is direct stimulation of the organ by systolic impact against costal resistance, and this may also be regarded as a cause of the premature failure of the hypertrophied heart so frequently observed in practice. He discusses the objections, and the relations of this view to the accepted notions of peripheral vasomotor constriction. He holds that the alleviative effects of the nitrites support his suggested explanation, in that they lead to an acceleration of the heart, with reduction of the cardiac output for each systole; so that a succession of small systoles has not the same concussion influence on the thorax as that induced by the slower and more powerful stroke of the enlarged heart in an erethetic condition.

4. **"Endemic Funiculitis."**—Under this term Castellani describes an affection of the spermatic cord, endemic in Ceylon, and perhaps elsewhere, which seems to him to have sufficiently characteristic symptoms to be ranked as a separate disease. A diplococcus is constantly found in the pus, but Castellani regards it from his experience as nothing more than a secondary agent only.

British Medical Journal, London.

July 4.

9 *Clinical Aspects of Pain. W. Bennett.
10 *So-Called Family Diseases: Premature Physiologic Senescence Localized to Certain Organic Systems. F. Raymond.
11 Abdominal Hysterectomy for Fibroids in London. J. Bland-Sutton.
12 *Etiology of Rickets. L. Findlay.
13 Causes of Peritonitis During Pregnancy. A. Cuff.
14 Mental Nerve Area and Greyness of Hair. G. L. Cheatle.
15 Streptococcus Infection of Eyelids Treated by Antistreptococcus Serum. S. Snell.
16 *Value of Bilateral Ureterostomy (Short Circuiting of the Urine) in Advanced Cancer of Bladder or Prostate. E. H. Fenwick.

9. **Pain.**—Bennett discusses the relation of pain to tenderness—pointing out that the absence of tenderness over the painful area does not exclude the possibility of its being present elsewhere, as, for instance, when acute pain about the pit of the stomach in some diseases of the spinal column is associated with tenderness over the primary lesion; pain in relation to temperature and pulse; the effect of pain on the general condition of the individual; the spontaneous disappearance of pain, acute or chronic; and shifting pain. He emphasizes the three following cardinal points: 1. No accurate estimate of the behavior of pain is possible in the absence of a careful study of the temperament of the patient. 2. Sudden or rapid disappearance of pain should never be accepted without reserve on its own account as a sign of improvement. 3. Sudden disappearance or rapid diminution of pain, unless it be coincident with proportionate improvement in the associated symptoms, is often a sign of impending disaster, and not an indication of recovery.

10. **Family Diseases.**—Raymond discusses the so-called "family diseases" of the nervous system and the part played by heredity in these diseases. He says that they can hardly be rightly described as diseases, for they are really "organic types abnormal from their very origin," exclusively created by the parents, by the ancestors, and developing quite apart from any external influence; for we see several brothers and sisters who have lived in widely different conditions developing at the same age the same disease. These diseases are not, however, always repeated in several members of the same family. The different clinical types which constitute them are not found to be identically the same in all cases. It seems as if each family had its own way of working out the family disease. Raymond discusses progressive muscular atrophy in its various types, which after differentiation are now proclaimed again as essentially one, due to the degeneration of certain organic segments of the neuromuscular system. The same demonstration can be made in regard to other family diseases, notably the hereditary ataxias. Raymond classifies these as follows: 1. A spinal form, with loss of reflexes, scoliosis, and club-foot added to the common syndrome. This would be the Friedreich type. 2. A cerebellar form, with atrophy of the optic nerves, vertigo, mental disturbances, added to the common syndrome, forming the Marie type. 3. A bulbar form, with vomiting, dyspnea and cardiac arrhythmia. 4. A bulbo-pontine form, characterized by auditory disturbances. 5. A generalized form, as in Menzel's case. These are all different types, but they are all linked together by the common cerebellar syndrome. It is most important to recognize accurately the family character of a disease, whatever be the disease and its localization. The morbid anatomy is characterized by the absence of any inflammatory reaction. The lesion consists simply in the disappearance of a system of cells or fibers which dissolve, as it were, without leaving a trace. Connective tissue growth then occurs and fills the void by taking the place of the cellular system that has disappeared. The process is very different from the conception of real battle between invaders and defenders, which modern conceptions ascribe to diseases; also from the less boisterous, but equally earnest, attack of poisons or toxins causing our cells to decay and modifying our body fluids, and from the traumatic changes about a tumor or a hemorrhagic area, or the massive necrosis of ischemia. The symptoms depend entirely on the physiologic functions of the tracts or cells that are doomed and gradually disappearing. The course of the disease Raymond describes as follows: The onset is slow and insidious, so that it is impossible to state accurately at what moment the trouble began. The course is always progressive. There is never any retrocession; never does a symptom fade or disappear when once it has appeared. Sometimes the course is hastened under the influence of certain causes (nearly always toxic or infectious). The patient is doomed from the very instant of his conception, as soon as spermatozoön and ovum have united. Now, this we can prevent by forbidding marriage to those individuals who bear a hereditary stigma. We must never forget that a physician must try to prevent at least as much as cure. Prevention, moreover, is easier than cure. From the standpoint of prevention it may be, therefore, of the highest practical importance to know the circumstances which give rise to family diseases. In the first place, we must inquire into the etiologic factors, such as we find them in the detailed reports on which has been built the history of these diseases. Unfortunately, at the present time we can trace but their outline. The problem may, however, be somewhat simplified by the following considerations, which, it seems, have not sufficiently engaged the attention of observers hitherto. The perfect development of a germ supposes in the first place the existence in that germ of its own attributes. In the human species the germ arises from the union of the spermatozoön with the ovum, and these must necessarily possess certain qualities for the germ to be able to develop. A favorable medium is particularly indispensable. The nerve cell naturally takes it share of the qualities of the primary germ cell born of the union of the spermatozoön with the ovum. Raymond insists on the fact that up to the very time of conception the modifications of the parent cells may have a very decided influence on the daughter cell, the germ. Among causes modifying the spermatozoön or ovum he mentions inebriety in the parents, poisons—such as cantharides—suggestion, great mental shock, or even the memory of such. He points, in illustration, to the case of a syphilitic man, who either begets no children or his wife aborts. Yet by the use of mercury by the syphilitic parent his inner medium is restored to normal and he begets a healthy child. An inquiry into the causes of family diseases is a most difficult enterprise, for it must go carefully into the circumstances that have modified the health of the parents before they conceived; it must include the question of opposition or synergy of hereditary taints; it must find out the possible disturbances of the maternal medium during pregnancy; it must examine the hygiene of the children, etc. All those points must be minutely investigated if we are to get at the truth. He thinks that for the purposes of a general classification these diseases should be grouped under the heading, "Premature Physiologic Senescence of Certain Organic Systems."

12. **Rickets.**—Findlay discusses the various etiologic theories, and reports a series of experiments of his own which lead him to the following conclusions. 1. Not one of the many theories which have been elaborated to explain the cause of

rickets has been universally accepted, and they all lack, not only from the clinical, but also from the experimental aspect, unequivocal proof. 2. It is some error in feeding which, in this country and America, is commonly believed to bring about the disease, but it is doubtful, however, if feeding plays any important part in the etiology of rickets. Experimentally, he, like several other observers, has been unable to cause the condition by improper feeding. 3. By confining young dogs and depriving them of exercise, rickets has been invariably induced, as in the experiments detailed, and that although their diet was a normal one, the air which they breathe pure, and their kennels were kept scrupulously clean, whereas control animals allowed exercise, but otherwise similarly treated, did not become affected. 4. Examination of the conditions under which rachitic children are reared, reveals one constant and invariable factor in their lives, namely, confinement. Alike, then, on clinical and experimental grounds, he accordingly concludes that confinement, with consequent lack of exercise, is the main factor in causing the disease.

16. **Bilateral Ureterostomy.**—Fenwick advances the following propositions: 1. What can be done for uncontrollable and luxuriant benign villous growth of the bladder, in which the patient suffers from exhausting hemorrhage or uncontrollable pain, or is commencing to suffer from ascending septic changes along the ureters? In such a case he agrees that bilateral nephrostomy, or better still, ureterostomy, should be performed, and a fortnight later the bladder should be removed—if the patient's physical condition and future seem to permit of this mutilation. 2. If the bladder is affected by interstitial cancer, which has so invaded the surrounding areas that no chance remains of removing the organ, he submits that bilateral ureterostomy is wiser, for this will relieve the patient of the agony of urination. 3. If malignant disease is detected in its early stages, as it can be by the cystoscope, it is wiser to perform double ureterostomy; and if the physical and renal condition of the patient permits, let the bladder, with or without the prostate and seminal vesicles, be entirely ablated.

Clinical Journal, London.

July 1.

17 Vermiform Appendix as a Pelvic Organ. J. Bland-Sutton.
18 *Interrelations of Abdominal and Thoracic Diseases. W. H. Allchin. (Concluded.)
19 Rheumatoid Arthritis. H. E. Symes-Thompson.

18. **Abdominal and Thoracic Diseases.**—Allchin, in this paper which was begun in the issue of June 24, discusses some inter-relationships, both structural and functional, between maladies as they affect the chest and abdomen. The problems presented by the heart and lungs, in their abnormal, as in their normal, working are predominantly physical, while the organs subserving digestion and excretion are much less susceptible of physical investigation, since their workings are so largely chemical in character. In the abdomen the sense of touch—the *tactus expertus*, and still more the *tactus eruditus*—is far more important and helpful than percussion, while auscultation is scarcely applicable at all. Allchin discusses the structural mechanism on which this mutual involvement depends—the parietal components, the vascular connections, the lymphatic connection, the innervation, and the diaphragm, round the respiratory movements of which the clinically most important functional relation between chest and belly centers. Contrary to what might be expected, inflammatory conditions do not readily spread from one cavity to the other, just as pleurisy of one side rarely involves the other side or the pericardium. While pneumonia may lead to pleurisy, the spread in the reverse direction is unknown. Pleurisy may be only complication of an acute peritonitis, but it is very uncommon. Acute suppurative peritonitis, however, is a common terminal affection in Bright's disease. Allchin discusses the condition variously known as "multiple progressive hyaloserositis," or "polyserositis," which he calls "a chronic morbid state that progressively involves the serous surfaces on both sides of the diaphragm, contrasting therein with the acute inflammatory changes in these regions." A right-sided pleurisy is occasionally met with in association with gallstones. He emphasizes the very distinctly protective power exerted by the serous membranes. A very numerous and important group of cases in which the thoracic and abdominal cavities are mutually implicated, is characterized by purulent collections on one or other side of the diaphragm, constituting empyema or pyopericarditis, in the chest, and those conditions included within the comprehensive term "subdiaphragmatic abscess," in the abdomen. Turning now to the spread of new growths from the one cavity to the other, it is at least singular that in the case of malignant growths there should be such a preponderance from the chest toward the abdomen, rather than in the reverse direction, as obtains in the other morbid states considered. He next describes the ways in which vascular disturbance in one region may affect that in the other; cases in which, with structural disease in one region there is a purely symptomatic involvement of the other without any gross anatomic change, especially the simulation on the one hand, of abdominal disease (irritant poisoning, appendicitis, acute peritonitis, perforation of gastric or duodenal ulcer, gallstone) by basic pneumonia, pleuropneumonia, empyema and pyopneumothorax; and, on the other, the cardiac and respiratory disturbances of abdominal origin.

Medical Press and Circular, London.

July 1.

20 Physical Examination of the Stomach. T. P. C. Kirkpatrick.
21 *Syphilis. H. Waldo.
22 Austrian Tyrol as a Health Resort. D. Walsh.
23 *Treatment of Corneal Ulcerations. C. G. Lee.

21. **Waldo.**—Published in *Bristol Medico-Chirurgical Journal*, December, 1907.

23. **Corneal Ulcers.**—Lee describes two types of ulcer: 1. That in which a slow and insidious destruction of tissue takes place; and 2, that which spreads more rapidly, less deeply, and with pus formation. In either type he has found the following instillation, ascribed by him to Richard Williams, useful.

R.	Quininæ bisulphatis, Atropinæ sulphatis, āā.....	13	or āā gr. ii
	Aquæ destillatæ	15	fℨiv

M. et. Sig.: Three or more drops to be placed inside the eyelid every four hours.

Should the ulceration be situated at the periphery of the cornea, eserin sulphate grain i (0.065), should be substituted for the atropin. These drops, with a 1 to 5,000 mercury bichlorid lotion, may suffice for mild cases. With severe primary infection or in persistent cases, the scalpel and cauterization (the actual cautery at a dull red heat is preferable) must be used. A few drops of a solution of fluorescin inside the eyelid will define the diseased area by tinting it green. If this fails, Darier's method, subconjunctival injections of mercury oxycyanid, 1 to 1,000 of water, must be tried. About 30 minims are injected.

Practitioner, London.

July—†Health Resorts and Climatic Treatment Number.

24 Climates for the Aged. H. Weber.
25 Health Resorts and Climates for Children. J. W. Carr.
26 *Change of Air in Young Adult Life and Early Middle Age. F. P. Weber.
27 Treatment of Pulmonary Tuberculosis. A. Latham.
28 *Evolution of the Preventorium. W. Ewart.
29 Saline Treatment of Scrofulous Lesions. F. Engelmann.
30 Climate and the Nose. G. Macdonald.
31 Ems Treatment of Respiratory Catarrhs. A. Vogler.
32 Spa Treatment of Heart Affections. J. Mackenzie.
33 Treatment of Gout. W. Weintraud.
34 Zander Method of Treatment. G. Hamel.
35 Configuration, Meteorology, and General Health of Midland Counties of England. P. Horton-Smith-Hartley.

†Besides the articles enumerated above, this issue of the *Practitioner* contains articles on the Climatic and Health Resorts of England, Scotland and Ireland, by A. G. R. Foulerton, J. T. C. Nash, A. P. Luff, G. A. Bannatyne, W. Edgecombe, H. N. Forbes, W. Williams, F. J. Charteris and J. A. Lindsay; on The Influence of High Altitudes, W. R. Huggard; The Three Estorils (Portugal), G. H. Brandt; Gibraltar, Algeciras, Ronda, W. Turner; Italian and Swiss Lakes, E. C. Hort; Italian Mediterranean Sea Coast, M. Foster; Health with that the results obtained fully justified the operation. Mori-

Pleasure in Norway, P. H. Hadfield; Some Renal Spas, L. Williams; The Spas of France, Belgium, Germany, and the Austrian Empire, by various authors; Health Resorts in Canada, A. Macphail; The West Indies, J. A. Coutts; The Canaries, F. Lishman; Voyages to the East, A. Chaplin; Egypt and North Africa, H. E. Leigh Canney, and Health and Travel in South Africa, C. M. Murray and W. A. Hayes.

26. **"Change of Air."**—Weber says that many complaints are cured by "change of air," "change of place," or "going for a holiday," undertaken either with or without the physician's advice. The factors that produce the beneficial effect, he believes to be: 1, A more open air life; 2, more muscular exercise (walking, etc.); 3, mental factors. The preliminary symptoms complained of include headaches, loss of appetite, disorders of sleep, lassitude, relative inability to do mental work, neuralgic pains in various parts, constipation, and (above all others) dyspeptic troubles. Among the most striking and uniform results of "change of air" in such cases are the removal of the dyspeptic troubles and "clearance of cobwebs" from the brain. Foremost among other disorders favored by a sedentary life in town, Weber places various gastrointestinal troubles. In cases of various kinds in which the treatment advised, or part of the treatment advised, consists in a holiday with change of air or a visit to some particular health resort, it is not unusual, especially after everything has been seemingly arranged, to hear: "Is it absolutely necessary to take a holiday? For it is most inconvenient to have to leave my work now!"—or "What will happen if I can not leave London now?" What really happens in many cases when the advice is not carried out is that the patient soon begins to feel better. The reason for this, Weber believes, is not far to seek. Everybody has his "ups and downs" or longer "waves" of vital activity (evidenced by capacity for work, etc.), which may to some extent be compared to the shorter rhythmical daily waves of body temperature and waves of sleep; but, in many conditions of chronic ill health, these (longer) waves of alternating vital depression and buoyancy, which normally should be scarcely noticeable, become exaggerated. Probably what usually occurs is that medical advice is sought during the period of greatest vital depression. Hence, even if the treatment recommended be not carried out, the patient is often likely to begin to feel better soon after the consultation, when the commencement of the period of relative buoyancy is due. Yet if this view be correct, the disadavantage of putting off the treatment is obvious, even should there be no actual danger to life in doing so, for, the cause of ill health (e. g., too continuous sedentary brainwork in town) not being got rid of, the mean level of vital power and health tends to sink, or else the waves of depression tend to become still further exaggerated.

28. **Preventoria.**—Commented on editorially in this issue.

Indian Medical Gazette, Calcutta.

June,

36 Typhus in Northern India. J. Husband and R. C. MacWatters.
37 Outbreak of Typhus in Peshawar. E. C. Hepper.
38 Dementia Præcox in India. G. F. W. Ewens.
39 *Cataract Extraction. R. H. Elliot.
40 *Uses of Appendicostomy. C. C. Barry.
41 Kala-Azar in Patna. B. B. Bosu.
42 Multilocular Cyst of the Neck in an Infant. C. F. Schaffter.

39. **Cataract Extraction.**—Elliott describes the routine at the Government Ophthalmic Hospital, Madras, including the Herbert technic for antiseptic treatment of the conjunctiva before operation. He cites the hospital records to show the vast decrease in all complications that has ensued in the five years subsequent to its introduction. He adds 22 short rules for the guidance of beginners, intended to obviate those mistakes that he has found to be made by nearly every one who has not had a large experience in the operation.

40. **Appendicostomy.**—Barry urges that this operation provides the most efficient means for thoroughly washing out the large bowel without undue distention or discomfort; that when once the operation has been performed, the further treatment of the case can be left with fair confidence to less skilled assistants; that in practically all cases great relief is afforded to the patient, and in many, actual cure is either brought about or greatly accelerated; that the dangers and difficulties of the operation are not such as can counterbalance the advantages that may be reasonably expected in suitable cases. But he also insists that the procedure is no panacea for all ills of the large bowel, and should be adopted only after careful judgment and after a fair and proper trial of the other more usual, and perhaps less attractive, medicinal measures.

Glasgow Medical Journal.

July.

43 Course of Cerebello-Olivary Fibers in a Case of Tuberculosis of Spinal Cord and Medulla. T. K. Monro and L. Findlay.
44 Hypertrophic Stenosis of Pylorus in an Infant. W. K. Hunter.
45 Unusual Mediastinal Tumor. W. MacLennan.
46 Intracystic Papilloma of an Accessory Thyroid. A. MacLennan and J. S. Dunn.

Annales de l'Institut Pasteur, Paris.

May 25, XXII, No. 5, pp. 370-464.

48 Efforts to Eradicate Malaria in Algiers. (Etudes épidémiologiques et prophylactiques du paludisme.) E. Sergent.
49 Action of Tyrosinase on Tyrosine. (Recherches sur la mélanogénèse.) G. Bertrand. Id. (Sur la façon dont la tyrosinase agit sur la tyrosine racémique.) G. Bertrand and M. Rosenblatt.
50 Leucocidins and Hemolysins in Anaerobic Cultures. P. Eisenberg.
51. Preservation of Plague Bacillus in Body of Bedbug. (Conservation du bacille pesteux dans le corps des punaises.) V. Jordansky and N. Kladnitsky.
52 *Causes of Failures in Treatment of Hydrophobia. (Causes d'insuccès du traitement antirabique.) Pampoukis.

52. **Causes of Failure in Treatment of Hydrophobia.**—THE JOURNAL has previously called attention to Pampoukis' warning, which he here reiterates, that severe chilling of the body or abuse of alcohol is liable to bring on hydrophobia after a course of Pasteur treatment which otherwise would have averted the disease. In the eleven failures among 4,524 patients given a course of treatment at the Athens Pasteur Institute five were in individuals thus exposed. One swam a river, another resumed cold douches, another was soaked in a rain storm, and another slept out of doors one night. The symptoms of hydrophobia developed in each case the day after the exposure. In 2 other cases, they appeared a day or so after the men had had a drinking bout. He warns therefore that extreme hygienic precautions are necessary for at least three months after the inoculations.

Annales de Médecine et Chirurgie Infantiles, Paris.

June 15, XII, No. 12, pp. 397-432.

53 Osteitis of Lower Jaw Simulating Sarcoma. Anaerobic Microbes. Broca, J. Hallé and Guillemot.
54 The Seashore and Brine Baths in Tuberculous Glandular Disease. (Action combinée du traitement marin et de la cure chlorurée-sodique dans la tuberculose ganglionnaire.) H. Richardière.

Bulletin de l'Académie de Médecine, Paris.

June 23, LXXII, No. 25, pp. 715-743.

55 *Semiologic Importance of Leukoplakia of Cheeks and Commissures, the So-called Smokers' Patches. (Valeur sémiologique des leucoplasies des joues et des commissures, dites "Plaques des fumeurs.") L. Landouzy.

55. **Differential Importance of Leukoplakia of the Mouth.**—Landouzy is convinced that buccal leukoplakia is much more common than generally realized. The use of tobacco is by no means indispensable for its production, the principal factor being syphilis. The latter can be discovered in nearly every case of leukoplakia, and on the other hand this lesion is extremely frequent in acknowledged syphilitics. The determining part played by syphilis should be recognized, he declares, even in the most attenuated forms of these whitish opaline, onion skin or dull mother-of-pearl patches on the inner surface of the cheeks and commissures. He gives an illustrated description of a few cases in which the discovery of the whitish patch cleared up the diagnosis and allowed effectual treatment when there was nothing else to suggest syphilitic infection. Some of the patients were women who had never smoked; the leukoplakia is thus not necessarily the work of tobacco, although the latter is probably a powerful contributing factor. One of his female patients showed merely a slight whitish line at one commissure, but mercurial treatment tentatively administered relieved the headache and

other symptoms of which she had been complaining, the benefit confirming the assumed syphilitic origin.

Obstétrique, Paris.

June, N. S. I, No. 3, pp. 289-352.

56 *Suppurative Meningitis in the Puerperium. F. Commandeur.
57 Breast Nursing from the Quantitative Point of View. (La sécrétion lactée considérée au point de vue quantitatif.) Plauchu and Gardère.

56. **Suppurative Meningitis in Puerperæ.**—Commandeur has been able to collect fifteen cases of suppurative cerebral and cerebrospinal meningitis toward the close of pregnancy, omitting all of tuberculous origin. The emptying of the uterus, spontaneous or artificially induced, has no influence on the course of the disease. On the other hand, the child does not seem to be affected by the mother's meningitis, and does not die until after her death, as a rule. This imposes the necessity for saving the child by artificial extraction in every case of acute meningitis with a living child after the seventh month. He summarizes the cases on record. The meningeal suppuration was primary in 10 cases, in 4 it complicated pneumonia, puerperal staphylococcus septicemia or otitis. The primary cases showed the unmistakable influence of influenza infection. The meningitis occurred nearly at term or in the first three days after delivery in almost all the cases. None was correctly diagnosed during life, eclampsia being generally suspected. The headache in meningitis is peculiarly intense, without remissions, constantly progressing, while the headache in eclampsia is often irregular in its course and intensity, and is sometimes accompanied by subjective disturbances in vision. The convulsions in eclampsia are not localized in certain groups of muscles of the head and members, like the convulsions of meningitic origin. There is a difference also in the continuity of the coma. The delirium in meningitis is frequently violent, sometimes furious, a condition which is not observed in eclampsia. Albuminuria may be present in both, but in meningitis the amount of urine is generally normal and there is no concomitant edema. Pupil anomalies, especially inequality of the pupils, speak in favor of meningitis, as also a turbid cerebrospinal fluid. Lumbar puncture in eclampsia generally brings a limpid fluid. In the ten cases in which the duration of the disease is mentioned, it proved fatal in one or two days in several, and never lasted for more than five days. Two living children were saved by an obstetric operation *in extremis*.

Presse Médicale, Paris.

June 24, XVI, No. 51, pp. 401-408.

58 Epidemiology and Bacteriology in Fight against Typhoid Fever. L. Tanon.
59 Inconveniences of Ethyl Chlorid in General Anesthesia. L. Camus.

June 27, No. 52, pp. 409-416.

60 *Differential Value of Leukoplakia. L. Landouzy.
61 *Infectious Ulcerations of the Fingers. L. Queyrat.
62 Tuberculosis of Pharynx. M. Letulle.

60. See abstract No. 55 above.

61. **Infectious Ulcerations of the Fingers.**—Queyrat has encountered eight cases of syphilitic chancre on the finger simulating paronychia, most of which had been erroneously diagnosed and treated. In one case the chancre simulated a felon. In another case a young dentist accidentally drove into his finger the point of a probe which he had just been using on the tooth of a casual patient and had not had time to clean. Five weeks later the typical chancre developed at the spot, although the wound had been supposedly disinfected at once with mercury bichlorid and had healed. The case shows the necessity for introducing the point of the actual cautery into the depths of such a wound, repeating the cauterization several times. This would certainly have destroyed the specific spirochetes, which have little resisting power. Superficial disinfection is of no use. He illustrates further some cases of soft chancre, dwelling on the differentiating points. The ulceration is painful and bleeds on pressure; the skin around is blue and swollen and the glands may be inflamed. These soft chancres on the fingers last from one to three months. When other means of differentiation fail, autoinoculation with scrapings from the sore induces in forty-eight hours the formation of another pustule, with ulceration about the fifth day. Another illustration shows an ulceration which followed a cut in the thumb from a knife just picked up in the street. The ulceration was diagnosed and treated as a syphilitic chancre for more than a month, with no improvement. Queyrat than differentiated the case as one of acute tuberculous ulceration, on account of the raising up of the edges, their sharp contour and bluish red tint. The bottom of the ulceration was irregular and knobby, with yellowish pus in the depressions. When a sheet of glass was pressed on the surface, several yellow spots could be seen through it. There was also some osteitis, and the tubercle bacillus could be cultivated from the lesion. He tried to save the thumb with general antituberculosis treatment and local thermocauterization, followed by application of 30 per cent. creosoted glycerin and hour baths of the arm in oxygenated water morning and evening. After two months and a half of this unremitting treatment, the lesion is now almost entirely healed.

Semaine Médicale, Paris.

June 24, XXVIII, No. 26, pp. 301-312.

63 Modifications in Blood Serum from Heating it. (Modifications du serum sanguin par le chauffage.) H. Sachs.
64 Appliance for Reducing Hump in Pott's Disease. (Traitement de la gibbosité du mal de Pott.) E. Eston.
65 Present Status of Notification of Transmissible Disease. (Où en est, en France, la question de la déclaration obligatoire des maladies épidémiques?) F. Widal.

July 1, No. 27, pp. 313-324.

66 *Development of Cirrhosis of the Liver. (La lésion parenchymateuse et les processus de cirrhose du foie.) N. Fiessinger.

66. **Cirrhosis of Liver.**—Fiessinger reports extensive experimental research which reconciles the interstitial and the parenchymatous theories of the development of cirrhosis of the liver. The anatomic evolution is complex. The cicatricial, biliary, vascular and pericellular processes are combined in various proportions, and both the interstitial and the parenchymatous tissues are involved. He thinks that previous contradictory findings are due to pre-existing lesions in the liver in the animals. A scrap should be taken from the liver through a minute incision in the epigastrium beforehand, to eliminate error from this source.

Deutsches Archiv für klinische Medizin, Leipsic.

June, XCIII, No. 4, pp. 331-457. Last Indexed, July 4 and 11, pp. 83 and 174.

67 Action of Chinoline Carbonates and their Derivatives on Elimination of Uric Acid. (Wirkung von Chinolincarbonsäuren und ihrer Derivate auf die Ausscheidung der Harnsäure.) A. Nicolaier and M. Dohrn.
68. *Experimental Research on Amount of Blood in Human Beings. (Quantitative Blutuntersuchungen.) H. P. T. Oerum.
69. Pathologic Physiology of Human Muscles. (Zur pathologischen Physiologie menschlicher Skelettmuskeln und über gewisse Beziehungen zur Funktion des Herzmuskels.) E. Rautenberg.
70. *Metabolism of Salt in Pneumonia. (Kochsalzstoffwechsel bei Pneumonie.) H. v. Hösslin.
71 Experimentally Induced Cirrhosis of Liver. (Experimentell erzeugte Lebercirrhose.) Fischler.
72 Pepsin Digestion. (Zur Kenntnis der Pepsinverdauung.) H. Fischer.

68. **Quantitative Research on the Blood.**—Oerum's extensive study of the amount of blood in human beings commends the carbon monoxid method for research on the blood, with an illustrated description of the apparatus used. He says in regard to chlorosis that it is a specific disease of females, which appears during the periods when the genital apparatus is undergoing transformation. Its essence is an increased amount of blood. The amount of hemoglobin is materially reduced, and it is this proportional reduction of the hemoglobin which occasions the morbid phenomena. The number of corpuscles may be normal. It is seen on reflection that all the measures which prove effectual in chlorosis act by reducing the amount of blood. He describes experimental researches which show that the blood pressure is the determining factor for the changes in the amount of blood. He also discusses the various types of anemia and the effect of light on the blood.

70. **Salt Metabolism in Pneumonia.**—Hösslin tabulates the findings in ten cases of pneumonia. They all show great retention of salt. The salt is not accumulated at any one point, but is diffusely distributed. The assumption of a relative insufficiency on the part of the kidneys has much in its favor, he thinks.

Deutsche medizinische Wochenschrift, Berlin.

June 25, XXXIV, No. 26, pp. 1129-1168.

73 *Resection of Joints. (Knochengelenkresektionen.) W. Müller.
74 *Arsenic Treatment of Experimental Nagana. Weber and Fuerstenberg.
75 *Etiology and Treatment of Chronic Conjunctivitis. Elschnig.
76 *To Clear the Cornea of Opacity from Metallic Caustics. (Aufhellung der durch metallische Aetzgifte verursachten Hornhauttrübung.) A. Guillery.
77 *Treatment of Puerperal Bacteriemia. (Bewertung gewisser Behandlungsmethoden der Bakteriämien des Kindbettes.) O. v. Herff. Commenced in No. 24.
78 Comparison of Technics for Measurement of Blood Pressure. (Die auskultatorische Blutdruckmessung im Vergleich mit der oscillatorischen von H. v. Recklinghausen und ihr durch die Phasenbestimmung bedingter klinischer Wert.) J. Fischer.
79 Degrees of Ataxia in Right Hemiplegia. (Relative Eupraxie bei Rechtsgelähmten.) S. Meyer.
80 Local Tetanus and its Origin. (Der lokale Tetanus und seine Entstehung.) L. Zupnik.
81 Speculum for Vagina with Intact Hymen. M. Wassermann.

73. **Resection of Joints.**—Müller remarks that the necessity for after-treatment to restore function by exercises, massage, electricity, etc., is universally recognized now, but the principle is not applied in practice to an ideal extent by any means. Local disinfection, even in suppurative cases, has been much promoted by the application of concentrated carbolic acid, rinsed off with alcohol, followed with a salicylic dusting powder. He prefers to pack the wound loosely with gauze, regarding tamponing as harmful for suppurating wounds. In all primary aseptic cases he seals up the wound, ready to open it at the first sign of trouble. He does not agree with those who shrink from resection if the patient is over 50; spinal anesthesia has enlarged the field for these operations, especially on the legs.

74. **Arsenic Treatment of Trypanosoma Affections.**—Weber found that nagana in small animals could be cured by a combination of two preparations of arsenic, when one alone proved ineffectual.

75. **Etiology and Treatment of Chronic Conjunctivitis.**—Elschnig calls attention to the chronic conjunctivitis due solely to excessive secretion of the Meibomian glands or to relative insufficiency of the eyelids, with defective closure during sleep. The chronic inflammation resulting from these causes can be readily cured: in the first case by squeezing out of the glands the excess of secretion, and in the second case by having the patients wear a linen band over the eyes, fastened to the ears, while they are in bed. The tarsal glands must be thoroughly evacuated every day by massage, pressing both lids together, the tarsal surfaces against each other, and the contents of the glands milked out with the fingers. This should be done every day at first and later as needed. In case of defective closure of the eyelids, the patient should push up the under lid occasionally during the day, and in severe cases a 3 per cent. boricized lanolin salve should be applied to the conjunctiva. Astringents are scarcely necessary, but compresses may prove useful.

76. **To Clear the Cornea of Opacity.**—Guillery states that primary opacity of the cornea, from the action of lime or other metallic caustics can be cleared up by chemically dissolving the opaque tissue. The best measure for the purpose is a mixture of ammonium chlorid and tartaric acid. This is applied to the cocainized eye, beginning with a 4 per cent. solution of ammonium chlorid, to which from 0.02 to 0.1 per cent. tartaric acid is added. The ammonium chlorid can be increased to 10 per cent. and more, but no more tartaric acid should be added.

77. **Treatment of Puerperal Septicemia.**—Herff has removed the uterus in 16 cases of puerperal septicemia and 8 of the women recovered. The fatalities were mainly due, he thinks, to his delay in deciding on operative measures or from the objections of the family. His experience has convinced him that supravaginal amputation with thorough cauterization of the stump may save many otherwise doomed patients, even in the most serious forms of puerperal fever. Many patients owe their recovery to careful diet. It is harder than it seems, he says, to help Nature in this respect, aiding without doing injury. He describes his experience in detail.

Medizinische Klinik, Berlin.

June 21, IV, No. 25, pp. 933-972.

82 *Physiology and Pathologic Physiology of Arrest of Postpartum Hemorrhage. (Postpartale Blutstillung.) M. Neu.
83 Severe Myelitis with Gangrenous Decubitus. (Schwere Myelitis mit gangränösem Dekubitis—Permanentes Wasserbad—Heilung.) E. Hoke.
84 *Importance of Motor Disturbances in External Ocular Muscles for Localization of Focal Brain Affections. (Bedeutung von Bewegungstörungen der äusseren Augenmuskeln für die Lokalisation zerebraler Herderkrankungen.) H. Steinert.
85 *Treatment of Tuberculosis According to Brehmer's Principles. A. Moeller.
86 *Superheated Air in Treatment of Gonorrheal Joint Affections. (Heissluftbehandlung gonorrhoischer Gelenkentzündungen.) W. Wagner.
87 Liver Affections after Intravenous Injections of Adrenalin in Rabbits. (Lebererkrankungen nach intravenösen Adrenalininjektionen beim Kaninchen.) J. W. Miller.

June 28, No. 26, pp. 973-1010.

88 Pathogenesis of Cretinism. (Kretinische Degeneration.) E. Bircher.
89* Clinical notes on Cancer. J. Schnitzler.
90 Alleged Dangers of Ocular Tuberculin Reaction. (Angebliche Gefahren der Konjunktivalreaktion.) F. Teichmann.
91 Localized Emaciation of Face. (Umschriebene Fettgewebsschwund des Gesichtes.) J. Strasburger.
92 *Pathogenesis and Treatment of Arteriosclerosis. L. Braun.
93 Prophylaxis of Transverse Presentation. (Wiederholte Querlage infolge von Uterus arcuatus; zugleich ein Beitrag zur Prophylaxe der Querlage.) A. Buecheler.
94 Courses of Mineral Waters in Heart Disease. (Trinkkur der Herzkranken.) L. Nenadovics.
95 Bacteriologic Diagnosis of Typhoid with Bile-Agar Cultures. (Typhusdiagnose mit Hilfe von Blutaussaat auf Gallenagar.) W. K. Stefansky.

82. **Physiology of Postpartum Arrest of Hemorrhage.**—Neu analyzes the physiology and pathologic physiology of the third stage of labor, emphasizing the fact that any healthy uterus may present atony from exhaustion after expulsion. The power of responding to stimuli is thus reduced to the minimum. Stimuli applied during this stage of exhaustion may even exhaust the uterus still further, showing the importance of allowing it time to recuperate unmolested. The main factors of the physiologic process of arrest of postpartum hemorrhage are the degree of excitability, the energy and the course of the contractions, and the kind of tonic retraction of the just-delivered uterus. If the hemorrhage continues, the best treatment is that which acts most quickly, most safely and most reliably by stimulation of the local nerve center for the uterus, and by rousing the excitability of its unstriated muscle tissue. This is realized by mechanical, thermic and chemical means adapted to individual cases.

84. **Oculomotor Disturbances in Localization of Focal Affections in the Brain.**—Steinert reviews the results of recent research in this line, calling special attention to certain points. He remarks that the kind and the grouping of the peripheral oculomotor symptoms are less instructive than the other signs of defective functioning for deciding as to whether the affection is intracerebral or basal. But if the accompanying symptoms are pronounced, the oculomotor disturbances may have decisive importance for the exact localization. Conjugated deviation is always regular and the head turns with it toward the side of the focus, except under a few exceptional conditions, which he enumerates. The phenomenon is transient, and both eyes are symmetrically affected. The symptoms of an affection of the pons do not include necessarily any pronounced deviation of the eyes. As a rule, there is only slight deviation, in consequence of the characteristic pontine disturbances. There is no actual deviation of the head, although it is usually slightly turned to one side as a half voluntary attitude assumed to compensate the paralysis. The head and the eyes are thus slightly deviated from the normal position, but toward opposite sides. In old cases even an expert may find it difficult to differentiate paralysis from a concomitant strabismus. Ordinary strabismus and even purely mechanical hindrance of function of single muscles of the eye may interfere with the movements so as to simulate paralysis.

85. **Brehmer's Pioneer Work in Treatment of Tuberculosis.**—Moeller was an assistant to Brehmer, the pioneer in the modern treatment of tuberculosis. The latter based his system of treatment on the assumed immunity of mountaineers to tuberculosis. He regarded the disease as the result of a certain inanition of the whole body, the consequence of weak heart action, which he sought to compensate. His premises

have been shown to be partly erroneous, but the structure he built on them has lasted. Moeller calls attention to a number of minor, but important points, such as that the grounds of his sanatorium were so arranged that the patients in taking exercise had to climb in starting out, while still fresh; the return was down a gentle incline. Seats for resting were provided at every turn throughout the grounds, to encourage the patients to rest often. He laid great stress on the injurious influence of worry and annoyances, and shielded his patients from them, instructing the families in this respect, and making every effort to promote cheeriness in his institution.

86. **Superheated Air in Treatment of Gonorrheal Joint Affections.**—Wagner tabulates the results of this treatment in 38 cases, stating that it is a decided advance over purely surgical measures. None of the 74 joints treated developed ankylosis, which can not be said, he declares, of any similar series under surgical measures.

89. **Clinical Notes on Cancer.**—Schnitzler would like to have cachexia stricken from the list of cardinal symptoms of carcinoma, as he knows of many instances in which physicians refused to diagnose cancer on account of the absence of cachexia. He gives examples to show the necessity of suspecting an epithelioma in the throat when indurated lymph glands are discovered in the side of the neck in an elderly person. A primary cancer in the stomach should also be suspected when the lymph glands in the axilla or the supraclavicular region become enlarged and hard but not tender. Still more suspicious of cancer in the stomach is an infiltration in the pouch of Douglas, such as he has observed in about a dozen cases. The infiltration in the anterior wall of the rectum sends out a process inward toward the lumen of the rectum and downward, shaped like the face of a seal ring. This infiltration may simulate a primary cancer in the rectum. In one such case of carcinoma at the pylorus with this metastasis in the pouch of Douglas, causing stenosis in the rectum, he performed gastroenterostomy and colostomy at one sitting, prolonging the patient's life for a year. He mentions parenthetically that he has observed this metastasis in the pouch of Douglas only with cancer of the stomach, with the exception of one case of cancer of the pancreas, and almost exclusively in men. Possibly this metastasis in men takes the place of the frequent metastasis in the ovaries in women. He also calls attention to the frequency of metastasis in hernias, especially when the omentum is involved. Cancerous glands may soften into actual cysts, and these cystic tumors may occur even in the liver. In one case he saw metastatic phlegmons develop on arm and leg as metastases of carcinoma in the esophagus. They were distinguished by the lack of severe inflammatory phenomena, and the pus was remarkably thin. He discusses the differentiation of genuine phlegmons from suppuration in and around a carcinoma, also the variations in the development of cancer, citing examples of unusually rapid and protracted growth. In one case the breast was hard and the lymph glands widely involved, the cancer being inoperable. It was found that the woman had been dismissed with this inoperable cancer five years before from another clinic. He thinks that carcinoma is of a relatively benign or malignant character from the first. His experience confirms the parallel relation between the duration of the symptoms before operation and the length of survival afterward. It seems evident that the improved technic of radical operations has merely improved conditions in regard to the prevention of local recurrence, the remote metastases are probably already existent at the time of operation, although they do not become evident until later. A significant fact is that a mouse cancer can be kept on ice for two years, and yet induce positive results when finally inoculated. He is convinced that emotional stress has a powerful influence on the development of cancer, and especially on the development of hitherto latent metastases. He relates several instructive instances—two in young men. Grief and worry may arouse a slumbering tendency to cancer, as they can turn the hair gray.

92. **Arteriosclerosis.**—Braun argues that the prevention of arteriosclerosis is included in the prophylaxis of the acute infectious diseases, for which he urges that greater attention should be paid to the care of the mouth. Calcification of the vessels is a secondary, not the primary, process in arteriosclerosis. The iodin preparations reduce the viscosity of the blood, and large doses should be given and kept up for months.

Mitteilungen aus den Grenzgebieten der Med. and Chir., Jena.
XIX, No. 1, pp. 1-186. Last indexed, June 6, p. 1950.

96 *Inflammation of Gall Bladder and Bile Channels without Gallstones. (Ueber Cholecystitis und Cholangitis sine concremento.) Riedel.
97 *Pathology of Fistula between Stomach and Colon. (Magen-Colonfistel.) O. Thorspecken.
98 *Alcaptonuria and Ochronosis. E. Allard and O. Gross.
99 *Physiologic Importance of Various Segments of Large Intestine. (Physiologische Bedeutung der einzelnen Dickdarmabschnitte.) O. Roith.
100 *Polyps in Stomach. (Polyposis ventriculi.) C. Wegele.
101 *Hyperalgetic Zones after Injuries of Skull. (Hyperalgetische Zone nach Schädelverletzungen.) P. Clairmont.
102 *Connection between Influenza and Appendicitis. E. Hönck.
103 *Transverse Severing of Spinal Cord at Third Dorsal Vertebra. (Transversaler Schnitt des Rückenmarkes.) S. Solieri.
104 *Castor Oil in Acute Appendicitis. (Ricinusbehandlung der akuten Appendicitis.) E. Sonnenburg and R. Kothe.
105 *Behavior of Roentgenized Animals to Bacterial Infection, especially in regard to Formation of Specific Antibodies. A. Läwen.

96. **Inflammation of the Gall Bladder and Bile Channels Without Concrements.**—Riedel says that among the 300 patients who applied to him for relief from supposed gallstones during the last three years, four had no indications of concrements. He had previously encountered two similar cases, and he relates the details of the total six cases. The pain in all commenced in the gall bladder, suggesting that the infection had arrived by way of the blood and not by extension from the intestine. Jaundice developed later. Removal of the gall bladder seems safest in severe acute cases, but in milder forms conservative measures are preferable if gallstones can be excluded. Prolonged drainage answers every purpose. Even if cholangitis has developed, it is comparatively useless to remove the gall bladder, and drainage offers the best prospects.

97. **Gastrocolic Fistula.**—Thorspecken's patient was a girl of 18 with tuberculosis of the skin and lungs. After a period of abdominal pains and feculent eructations, fecal vomiting was observed daily for three weeks, with regular stools, completely clay-colored. The principal symptoms of gastrocolic fistula are fecal vomiting, diarrheic stools and lientery, the stools containing an excess of mucus and partially digested food. In the present case only the first of these symptoms was present. Autopsy revealed tuberculous ulcerations throughout the splenic flexure, with a fistulous perforation into the stomach. A little dried bile was found in the gall bladder, but not a trace of bile in the entire system of bile ducts, and the contents of stomach and intestines were completely acholic.

98. **Alkaptonuria and Ochronosis.**—Allard and Gross report a case which confirms the connection between alkaptonuria and ochronosis. It also shows that severe joint changes are the direct result of the accumulation of the pigment in the cartilage tissue. Both the ochronosis and the alkaptonuria are evidently, they think, manifestations of one and the same anomaly in the metabolism.

99. **Physiologic Importance of Different Segments of the Large Intestine.**—The clinical and experimental researches related by Roith confirm the views in favor of an antiperistalsis. The latter occurs principally in the cecum, ascending colon and the first part of the transverse colon. The rest of the intestine seems to be free from antiperistaltic movements, except possibly the sigmoid colon. These facts should be borne in mind in making an artificial anus.

100. **Polyposis of the Stomach.**—Wegele reports the case of a woman of 59 who had suffered from supposed gallstone colics for many years; during the last few years diarrhea had alternated with constipation, and there was pain in the left hypochondrium with increasing weakness, emaciation and achylia. The motor function of the stomach seemed unimpaired, and there was no palpable tumor. The stomach tube always brought away a scrap of tissue covered with fresh blood. An exploratory incision in the stomach showed that the entire surface of the gastric mucosa was studded with soft polyps. Gastroenterostomy relieved the symptoms, but the patient continued to lose weight. Examination eighteen months later gave the same findings. The stomach was not removed, owing to the age and weakness of the patient, and

the fact that cancerous degeneration of gastric polyps has been observed only in very rare instances.

101. **Zones of Hyperalgesia After Injuries of the Skull.**—Clairmont reports a case of bullet wound of the right temple, the bullet passing outside the skull into the rear of the right orbit. Besides the transient visual disturbances and paralysis of the oculomotor, trochlear and abducent nerves, a symmetrical zone of hyperalgesia was observed on the neck and breast, such as Wilms has described. It is probably due to injury of the sympathetic root of the ciliary ganglion. In another case after slight concussion of the brain a zone of paresthesia and hyperesthesia was observed on one side of the vertex. He tabulates the details, with illustrations, of these zones in 11 cases of bullet wounds of the head, in 6 cases of fracture of the base of the skull and concussion of the brain, and in 7 with concussion of the brain alone.

102. **Relations Between Influenza and Appendicitis.**—Hönck asserts that the infection which we call influenza is not always located primarily in the throat, but the intestines, and especially the cecum and appendix may be the nidus of infection. Cases of appendicitis developing after an epidemic of influenza should be regarded as a relapse of an appendicitis which was either falsely diagnosed as influenza, or in which an influenzal sore throat coincided with an infectious process in the appendix. He has often observed an angioneurotic edema in the throat following immediately after the decline of the fever in appendicitis. He has also observed that inflammation in the throat and in the appendix may occur without symptoms. Another fact to which he calls attention is the occurence of pains in the rear of the abdominal cavity, during appendicitis. These pains are in the root of the mesentery, so that the pain in appendicitis may be felt in the back rather than in the abdomen. He believes that appendicitis occurs as frequently as tonsillitis, only that we are unable to recognize its milder forms. Many cases classed as influenza are in reality appendicitis, and he is confident that appendicitis may be contagious in some cases.

103. **Transverse Section of Spinal Cord.**—Solieri reports a case in which a man of 36 had the spinal cord completely severed with a long knife at the level of the third dorsal vertebra. There was at once lax motor and sensory paralysis of all kinds, and two hours later the tendon reflexes were found permanently abolished. By the sixteenth hour decubitus began to develop, which continued a constantly progressive course, on the sacrum, heels and base of the thorax. During the three months before death the symptoms changed during the various phases. At first the general condition was good and the superficial reflexes could be elicited. But gradually they waned. There were also observed clonic, spontaneous or reflex contractions of the legs; and clonic and tonic contractions of the arms (period of ascending and descending processes of degeneration in the spinal cord). At first there were priapism and increased dermography, followed later by normal conditions in this respect, evidently from vicarious functioning of the sympathetic. The paralysis of the rectum and bladder noted at first gradually subsided to normal or intermittent functioning; and this stage was succeeded by incontinence as the distal segment of the spinal cord became degenerated. The muscles gave a positive or negative reaction according to the period of observation. He also discusses the sensory disturbances and describes his suture of the spinal cord 16 hours after the trauma. The condition seemed to be unusually favorable for suture of the cleanly severed cord. The stumps were an inch apart, but were regularly coaptated by two stitches through dura and cord, with four stitches in the dura alone. The results of the operation were negative.

104. **Castor Oil Treatment of Appendicitis.**—Sonnenburg has for some time been proclaiming the superior advantages of systematic administration of castor oil in the milder cases of appendicitis. If the condition begins immediately to improve there is then no need for an operation, but if no improvement is apparent he operates at once. He emphasizes that this castor oil test is not adapted for private practice, but is only for the surgeon. The most solicitous supervision is necessary, with everything prepared for an operation at any moment. Unless temperature, pulse and leucocytosis are approximately 37.5, 92, 15,000, he does not attempt the castor oil treatment. Even when destructive appendicitis is diagnosed, if the general condition is good and the disease process strictly localized, he gives the castor oil to improve conditions for the further course of the affection. In 150 cases last year rapid improvement followed in 144 cases; six patients required operation, as no improvement was observed; all recovered. He reiterates in conclusion that this castor oil treatment without supervision of the leucocytosis is entirely worthless.

105. **Behavior of Animals in Response to Bacterial Infection After Exposure to the Roentgen Rays.**—The extensive experiments related by Läwen confirm the assumption that the blood-producing organs, and especially the groups of cells connected with the production of leucocytes, are the sites of production of the specific antibodies.

Münchener medizinische Wochenschrift.

June 23, LV, No. 25, pp. 1321-1368.

106 *Freund's Operation—Chondrotomy of First Rib in Incipient Apical Tuberculosis. (Chondrotomie der 1. Rippe bei beginnender Spitzentuberkulose.) H. Seidel.
107 Diagnostic Inoculation with a Fat-Free Tuberculin. (Diagnostische Impfungsversuche mit einem fettfreien Tuberkulin.) A. Leber and S. Steinharter.
108 *Ovarian Antibodies and Osteomalacia. (Ovarialantikörper und Osteomalacie.) L. Fraenkel.
109 Acute Dilatation of Heart from Overexertion. F. Moritz.
110 Affections of Lachrymal Glands and their Treatment. (Tränenkanalleiden.) E. Enslin.
111 Feeding Infants with Artificially Drawn Breast Milk. (Ernährung mit abgesogener Muttermilch.) W. v. Starck.
112 *Improved Technic for Examination of Urine. (Erleichterung bei der Urinuntersuchung.) F. A. Hoffmann.
113 Operative Treatment of Cavity in Lung. E. Hoke.
114 Static Electricity in Dermatology. (Dermatotherapeutische Verwertung der statischen Elektrizität nach Suchier.) Jesionek. Commenced in No. 24.

106. **Chondrotomy for Incipient Apical Tuberculosis.**—Seidel corroborates the assertions of Freund in regard to the advantages of restoring flexibility to the upper part of the chest when it has become rigid, thus inducing a predisposition to apical lesions. He has operated thus in two cases with fine results, mobilizing the rigid first rib. He illustrates his technic, cutting the cartilage of the first rib slanting from the axilla toward the throat. If the lesion has spread beyond the apex this chondrotomy is useless, as it modifies merely the conditions in the apex.

108. **Ovarian Antibodies and Osteomalacia.**—Fraenkel discusses the questions whether antibodies for the ovarian substance or secretion are found in the blood; whether such antibodies occur in increased amounts after loss of ovarian functioning; whether they are the cause of the symptoms of the premature menopause, and whether the antibodies pass into the milk and the other secretions and excretions. He is inclined to think that osteomalacia and the symptoms of the premature menopause are opposite extremes, like myxedema and exophthalmic goiter from insufficient or excessive thyroid functioning. The good results obtained in the former with serum of thyroidectomized goats encouraged him to treat osteomalacia with the milk from a goat whose ovaries had been removed. An xi-para with osteomalacia, recurring more and more severe at each pregnancy during the last seven years, was fed on the milk of the castrated goat. The case was one of typical, far-advanced osteomalacia; the pulse rate ranged from 120 to 140; the heart was bad; the weight had dropped to 61 pounds, and the patient was bedridden. Within a month after commencing to take the milk of the castrated goat the patient was able to walk, the pulse rate was 96, and she had increased ten pounds in weight. For various reasons Fraenkel thinks that intravenous injection of blood serum from women presenting the symptoms of premature menopause would be more effectual than the milk of castrated goats, as more concentrated. There is still another way for this antibody treatment of osteomalacia, by immunization with ovarian substance to obtain an immune serum for the purpose. If it is found that ovarian antibodies do actually paralyze the functioning of the ovaries, they may be found effectual not only in osteomalacia, but whenever it is desired to restrict the action of the ovaries, as for instance, in menstrual disturbances and in case of myoma, etc.

112. **Examination of Urine.**—Hoffmann illustrates a little contrivance with which it is possible to collect on a flat plate

the sediment of centrifugalized urine. The plate is then transferred to the microscope as the object glass. Another arrangement is a spherical prolongation of the sedimentation tube, with a stopcock below. With these it is possible to reveal the presence of formed elements in urine which would otherwise escape detection.

Wiener klinische Wochenschrift.

June 25, XXI, No. 26, pp. 931-968.

115 Relations between Endotoxins and Toxins. R. Kraus.
116 Positive Response to "Specific" Test for Syphilis in Non-syphilitic Affections. (Positive Wassermann-Neisser A.-Brucksche Reaktion bei nichtluetischen Erkrankung.) E. Weil and H. Braun.
117 Clinical Experiences with Precipitation with Distilled Water in Serum of Syphilitics. E. Klausner.
118. Anastomosis between Portal Vein and Inferior Vena Cava in Collateral Circulation in Cirrhosis of Liver. (Das Retziusssche System als Kollateralkreislauf bei Leberzirrhose.) R. Franz.
119 *Etiology of Portal Thrombosis. (Pfortaderthrombose.) V. Hecht.
120 Operation for Phimosis. O. Föderl.
121 Backward Dislocation of Foot and Extension Dressing with Flexed Knee. (Verrenkung des Fusses nach hinten und den Extensionsverband bei gebeugtem Knie.) K. Ewald.
122 *Conservative Treatment in Gynecologic Affections. P. Profanter.

119. **Etiology of Portal Thrombosis.**—Hecht reports a case distinguished by displacement of the trunk of the portal vein. The patient was a girl of 15 who had been subject for years to recurring vomiting of blood. The malformation was evidently responsible for the portal thrombosis and the varicose veins in the esophagus and stomach.

122. **Conservative Treatment of Gynecologic Affections.**—Profanter practices at Franzensbad, and for more than twenty years he has been much impressed with the therapeutic efficacy of prolonged irrigation of the vagina with hot mineral water, especially when combined with mud baths and gynecologic massage. Scar tissue softens, its absorption is promoted and various gynecologic affections are promptly cured. He heats the water with a jet of steam so as not to modify its chemical or radioactive properties. The fresh mineral water has a specific healing influence, he asserts, on catarrhal affections of the mucosæ. He uses a pear-shaped, two-way glass cannula, the outflow smaller than the inflow, to allow distention of the vagina. He does not recommend a course longer than six or eight weeks of daily irrigations, commencing with a three to ten minutes' flushing, the water at a temperature of 37 C. and never higher than 50 C. (123 F.). He has never had any mishaps from gynecologic massage, although he has applied it 30,000 times.

Gazzetta degli Ospedali e delle Cliniche, Milan.

June 21, XXIX, No. 74, pp. 777-792.

123 *Prognosis of Injury of the Cornea. (Prognosi delle bruciature della cornea.) T. Di Giuseppe.
124 *Albuminuria in Parathyroid Insufficiency. A. Massaglia.
125 *Slow Pulse Rate in Acute Parotitis. G. Ghedini.
126 Four Cases of Chronic Laryngotracheal Stenosis cured by Laryngotracheostomy. U. Melzi and A. Cagnola.

June 28, No. 77, pp. 809-822.

127 *Suprarenal Extract in Aortic Insufficiency. (Opoterapia surrenale sulla insufficienza aortica.) G. Melchiorri.
128 *Spinal Anesthesia. (Analgesia midollare.) D. Maragliano.
129 *Thymus Treatment of Disturbances in Growth of Children. (Syndrome da accrescimento e distiroidismo—Saggio d' interpretazione patogenetica e tentativo opoterapico.) P. Galli.

123. **Prognosis of Injury of the Cornea.**—Di Giuseppe describes a little instrument for testing the sensibility of the cornea after injury from a caustic. So long as sensibility is retained the prognosis is not absolutely bad.

124. **Albuminuria in Parathyroid Insufficiency.**—Massaglia noted albuminuria in nearly all the animals whose parathyroids he removed. The albuminuria was intermittent, but it showed that the parathyroid insufficiency had evidently affected the kidneys injuriously so that any slight increase in the autogenerated toxins was sufficient to induce albuminuria under these conditions. On the other hand, partial thyroidectomy, leaving one-fifth of the thyroid gland with all the parathyroids intact, was not followed by albuminuria. These experimental findings confirm what is observed in the clinic.

125. **Slow Pulse in Mumps.**—Ghedini noticed bradycardia in 17 cases of epidemic parotitis, and here describes 10 of the most typical examples. The pulse ranged from 40 to 56 beats a minute with normal temperature, increasing to 70 and 90 with fever. The patients were all men between 18 and 36, and orchitis was a frequent complication.

127. **Suprarenal Extract in Aortic Insufficiency.**—A number of pulse tracings are given to show the benefit that followed suprarenal treatment in a woman of 50 with aortic insufficiency and tachycardia. Small doses were given daily for three months, and they seemed to strengthen the tone of the walls of the blood vessels, thus regulating the blood wave and improving conditions in the left ventricle by reducing the work of the heart and the sudden distention of the arteries. Melchiorri thinks that suprarenal treatment has a promising future in these "hydraulic disturbances" from aortic insufficiency.

128. **Spinal Anesthesia.**—Maragliano calls attention to the fact that the alkaline reaction of the cerebrospinal fluid is liable to cause precipitation in the anesthetic solution, which thus loses its analgesic properties in large measure. He has found that 0.5 per cent. of glucose added to the anesthetic solution seems to prevent this precipitation. It is thus possible to induce the anesthesia with a smaller amount of the anesthetic. Cocain has the property of preventing the precipitation of the anesthetic, as also certain other anesthetic drugs tested.

129. **Thymus Treatment of Disturbances in Growth.**—Galli theorizes to explain the disturbances in growth of children and youths as an expression of perverted thyroid functioning, pointing out the analogy between certain symptoms observed in rapidly growing children and those of exophthalmic goiter. For these reasons he has given thymus opotherapy a thorough trial in three typical cases in children between 11 and 14. Heart disturbances predominated. The fresh thymus gland was given for five or six weeks and improvement was marked.

Policlinico, Rome.

June 21, XV, Practical Section, No. 25, pp. 773-804.

130 *Adenoid Vegetations and Inability to Concentrate the Attention. (Vegetazioni adenoidi ed aprosexia nei bambini.) A. F. Bonazzola.

130. **Adenoid Vegetations and Inability to Concentrate the Attention.**—Bonazzola found among 400 school children at Bologna that 141 displayed a want of power to concentrate the attention. Examination of this group revealed adenoid growths in all but 24. In the 24 with aprosexia without adenoid vegetations there invariably was nasal obstruction from some other cause, and the children were neurasthenic and presented signs of inherited physical degeneracy. He suggests the term "primary aprosexia" for these cases of pseudo-adenoid syndrome. Adenoid vegetations were discovered also in 59 children free from the "nasal aprosexia." In the total 176 with these growths 66 per cent. were pointed out by the teachers as lacking power to concentrate their attention.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

FRIEDBERGER AND FRÖHNER'S VETERINARY PATHOLOGY. Vols. I and II. Translated by M. H. Hayes, F.R.C.V.S., Author of "Points of the Horse," etc. With Notes on Bacteriology by Professor R. Tanner Hewlett, M.D., F.R.C.P., M.R.C.S., D.P.H. Sixth Edition. Cloth. Price, $8.00 per set. Chicago: W. T. Keener & Co., 1908.

A SHORT PRACTICE OF AURAL SURGERY. By J. Arnold Jones, M.B., Ch.B. (Vict.), F.R.C.S. (Ed.), Hon. Assistant Aural Surgeon to the Manchester Eye and Ear Hospital. Cloth. Pp. 260, with illustrations. Price, $1.75. New York. John Lane, 1908.

HANDBUCH DER BIOCHEMIE DES MENSCHEN UND DER TIERE. Herausgegeben von Dr. Phil. et Med. Carl Oppenheimer, Berlin. Vol. II. Paper. Pp. 320, with illustrations. Price, $1.25. Jena: Gustav Fischer, 1908.

MEDICAL GYNECOLOGY. By Samuel Wyllis Bandler, M.D., Fellow of the American Association of Obstetricians and Gynecologists. Cloth. Pp. 676, with illustrations. Price, $5.00. Philadelphia: W. B. Saunders Co., 1908.

CONSUMPTION. By C. H. Stanley Davis, M.D., Ph.D., Member of the New Haven County Medical Society. Cloth. Second Edition. Pp. 218. Price, $1.00. New York: E. B. Treat & Co., 1908.

FLORENCE NIGHTINGALE'S INFLUENCE ON MODERN NURSING. By Dr. M. H. Bochroch, Philadelphia. Paper.